



# MOTOR AGE

CHILTON PUBLICATION  
DEVOTED TO THE INTERESTS OF THE INDEPENDENT REPAIR SHOP

*RR copy*

DECEMBER  
1937

## IN THIS ISSUE



Entrance to the Navy Pier, Chicago, where the Automotive Service Industries Show is being held December 6-11.

### Service Trend On 1938 Cars

Here is an article you'll be sure to read if you're anxious to keep up with the changes on the new models.

### Overhauling The Automatic Transmission

You'll want to keep this article handy for quick reference as it gives all the short cuts on servicing this new unit.

### A Catalog of New Products

A complete section devoted to descriptions and illustrations of many of the new products introduced this fall, many of them being displayed at the A. S. I. Show. You'll find it a big help if you're looking for opportunities to increase your profits.

# AC Renewal Air Cleaner Elements **SELL EXTRA WELL IN WINTER!**



**SELL THEM NOW!** Dirty air cleaner elements make the gas mixture too rich. That's bad in any weather. *It's worst in winter!* To assure easy starting, and prevent gas waste, crankcase dilution, and excessive battery drain, a perfect mixture is a necessity in cold weather.

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Remember, a new element assures your customer of *the same quality of air cleaning* he got when his car was new. Renewal elements are factory-prepared with a special, high-viscosity, low-evaporation oil.

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FITS 2½ MILLION  
of these cars**

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Hudson 6 and 8	Buick 40-60-80-90
Pontiac 6 and 8	Dodge 6
Studebaker 6	Lincoln Zephyr
Ford V-8	Oldsmobile 6 and 8
Nash 37-20	Plymouth
Terraplane	Lincoln 12
Willys	Chrysler C14-15-17

**Costs less to install a New  
Element Than to Service  
the Old**

**ORDER FROM YOUR  
AC WHOLESALER**



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## for Faster Sanding

THAT'S what you get with a Van Dorn Portable Electric Sander—plenty of power to save time and increase your profits on practically every auto body and fender job which comes into your shop. Van Dorn Sanders with their various attachments quickly remove rust and paint and prepare metal surfaces for painting and touching up; grind welds; wire-brush dirt and tar from under fenders; rub down new lacquer to remove "orange peel." See them at your Jobber's, or write for catalog. The Van Dorn Electric Tool Co., 732 Joppa Rd., Towson, Md. (Div. of Black & Decker Mfg. Co.)



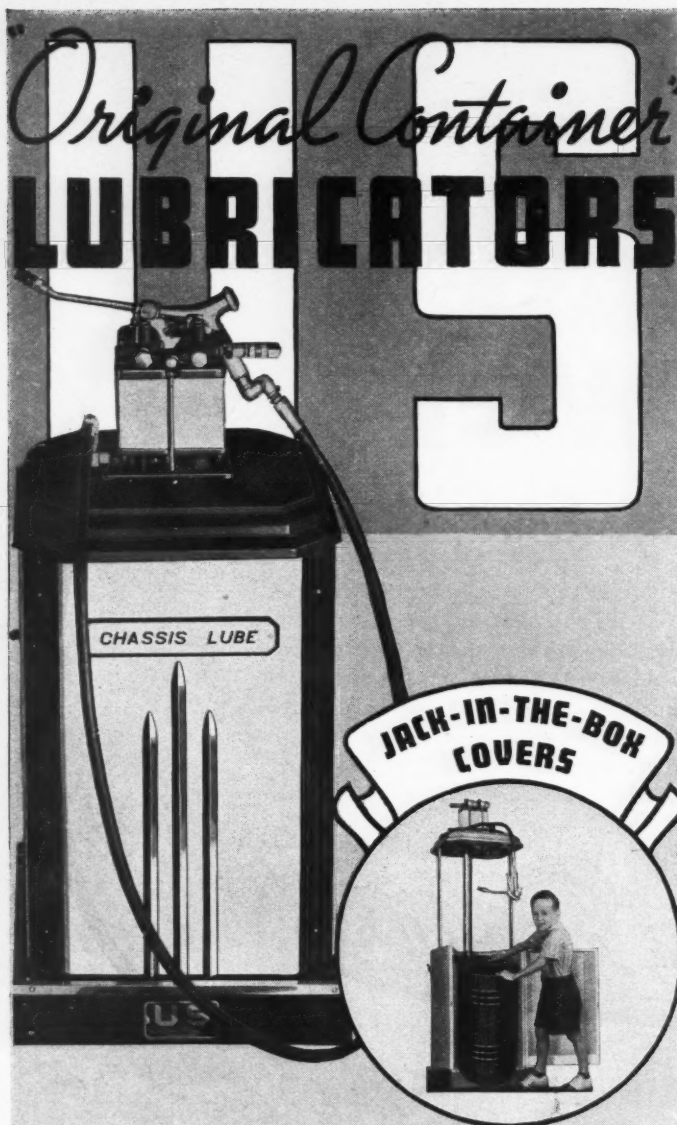
FOR POWER, SPECIFY

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The Red-headed  
PORTABLE ELECTRIC TOOLS

LOOK FOR THE RED HEAD





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It's simple, easy and clean for the operator  
... fast, efficient and clean for the motorist.

*Don't buy before you try  
changing grease drums.*



**U.S. AIR COMPRESSOR  
COMPANY... CLEVELAND, OHIO**  
AIR COMPRESSORS • AIR TOWERS • HYDRAULIC LIFTS  
GREASING EQUIPMENT • CAR WASHING SYSTEMS

# MOTOR AGE

DEVOTED TO THE INTERESTS OF THE INDEPENDENT  
REPAIR SHOP

*Subscriptions for Motor Age are accepted only from  
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## SHOP TALK

### Aspirin

Christmas is nearly here with its usual headaches of whether to buy Aunt Lizzie a pair of silk panties or a free-wheeling waffle iron; or whether Cousin George would get sore if you gave him one of last year's neckties. But one thing is sure and that is if Cousin George and Aunt Lizzie own automobiles, they will be tickled pink if they get something for the car. Shop owners will do well to capitalize on the idea by suggesting to their customers when they come in the shop, or by direct mail, that they have a line of accessories that will be ideal for Christmas gifts. But the idea has to be pushed.

### Help

Well, our old friend H. H. Rose in Duluth has been getting plenty of cooperation from the readers of MOTOR AGE who heard of his difficulties in hopping up a Studebaker in the October issue. Just to mention a few of the more recent letters, Doss Drodgy of San Angelo, Tex., says he thinks the trouble is caused by the wrong type of transmission assembly or an obstruction in the manifolding. Vet Losey, who has been on the job every day since 1914, tells me that I'm slipping instead of the clutch in Rose's car, and that I neglected to get the actual circumference of the tires when I made my guess. O. S. King, of Detroit, Mich., says there must be some manufacturing defect and sug-

gested paying particular attention to the free-wheeling unit. And so it goes. As soon as Rose lets me know how the trouble was overcome I'll let you know.

### Travelogue

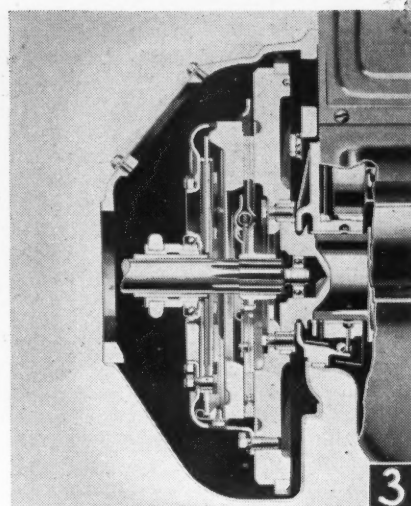
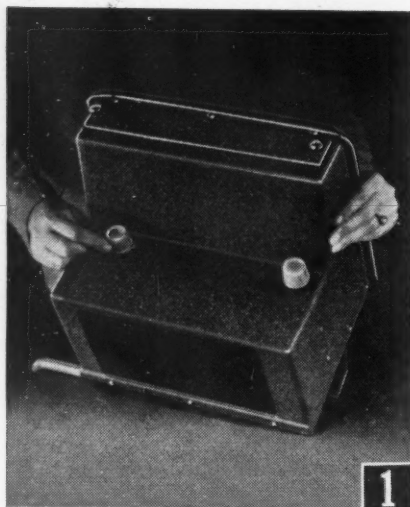
Just came back from a trip to the wide, open spaces—Chicago, Racine, South Bend, Indianapolis, etc. As I was hitting the high spots, I didn't have much chance to see many of the fellows, but I did stop in and see Les Bullock out on Cottage Grove Ave., in Chicago. Les reports that at least 50 per cent of his repair work is on trucks, and is looking forward to seeing the next edition of the Chilton flat rate, as that will have practically all the major trucks, including International, which we didn't have in the eleventh edition.

### More Help

Speaking of loyal readers, Walker Hodgson up in the wilds of northwestern Canada, Blue Ridge to be exact, on reading of the trouble Carl Ferguson was having with a Mallory equipped Packard, wrote to the Mallory company to get their reaction. Their answer was incorrect ignition timing. In case you're interested, Carl's trouble was described in the September issue.

And before signing off, I want to say Merry Christmas and in the words of Tiny Tim "God bless everyone of us."

*Bill Toboak*



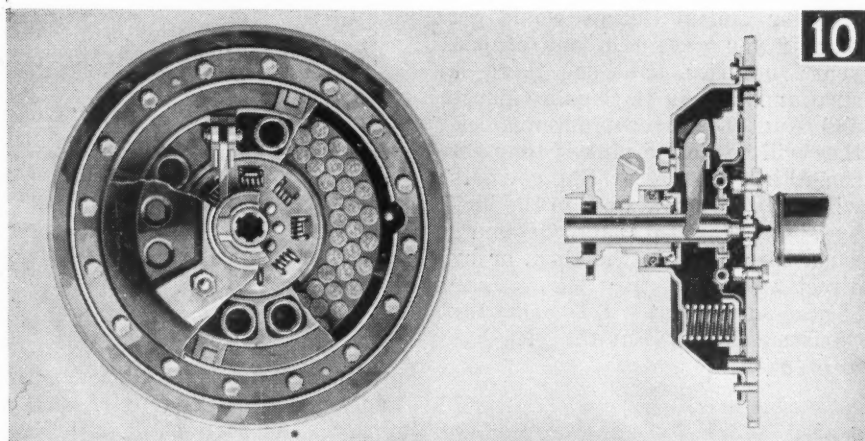
# Service Trend on 1938 Cars

by **BILL TOBOLDT**

**W**HILE the service procedure to be followed on the majority of 1938 cars is similar to that used on the preceding models, there are a number of features which will be of considerable interest to repairmen.

Chief among these new features will be the new automatic transmissions, the power shifting mechanisms and the mounting of the shifting lever on the instrument panel. Details of the service procedure on the automatic unit as used on Olds and Buick are given elsewhere in this issue. The Bendix unit, popularly known as the Electric Hand, is carried over from previous years with only slight modifications.

The vacuum shifting devices used on such cars as Graham, Nash and Studebaker utilize the manifold vacuum only for gear shifting, and from a service point of view should require only occasional inspection and, at long intervals, the replacement of piston cups. On Graham,



1. The air conditioning unit on the Nash cars.
2. Buick pistons are domed for increased turbulence.
3. A diaphragm spring features the new Chevrolet clutch.
10. Additional springs and increased size features the Hudson clutch.

Studebaker and Nash cars vacuum is placed on both sides of the actuating piston and air is bled from one side to actuate the piston. Gears are shifted by a miniature lever which can be located on either the instrument panel or steering column.

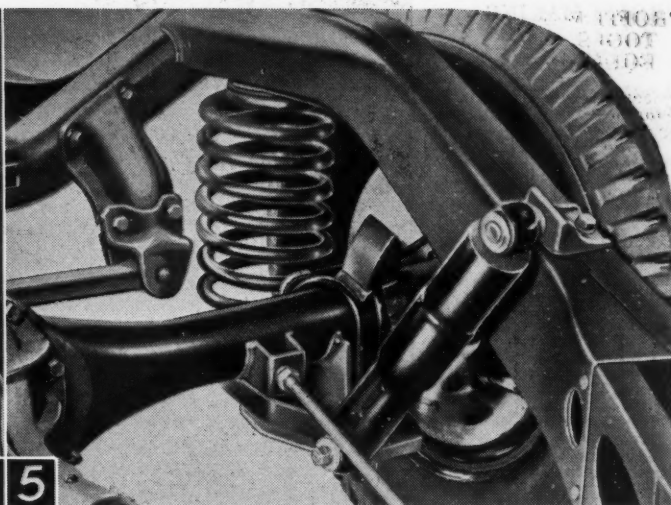
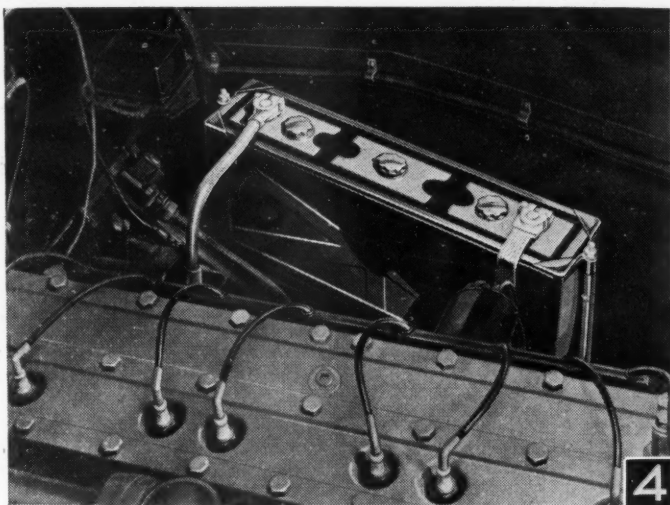
Pontiac, Cadillac and Lincoln-Zephyr also have the gear shift lever mounted on the instrument panel, the shifting being accomplished through a series of levers.

Another transmission develop-

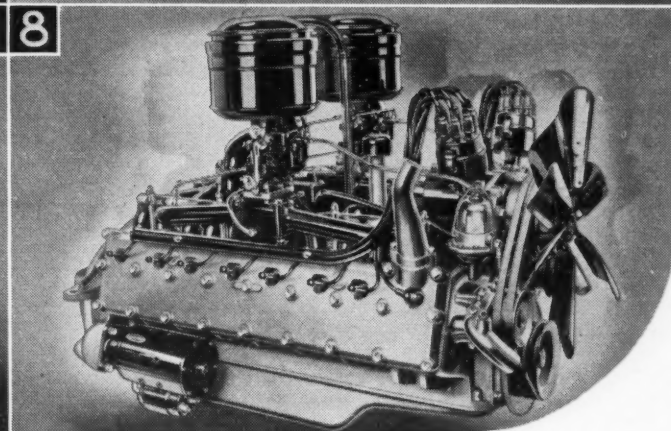
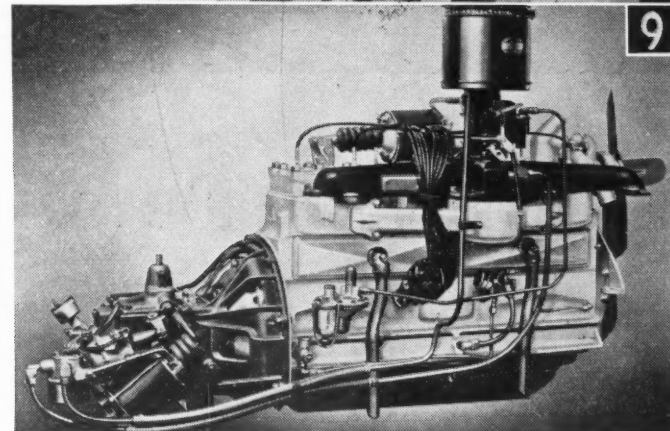
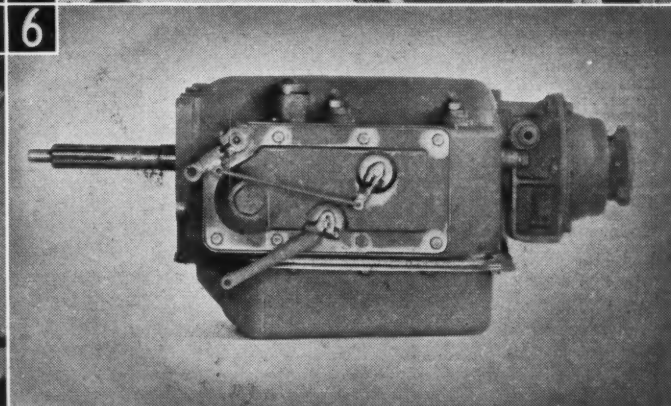
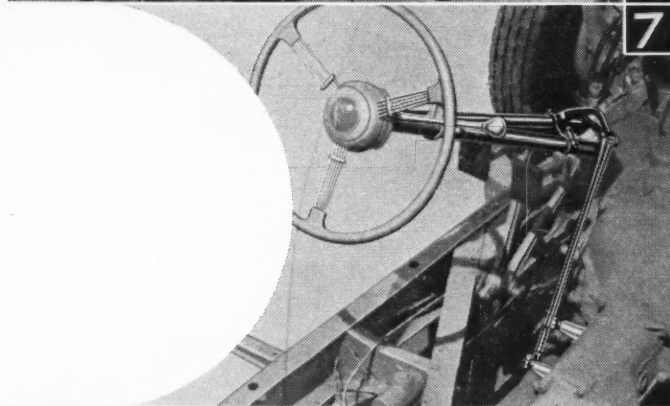
ment is the placing of the transmission on its side. In other words, the main and countershafts are placed side by side instead of having the mainshaft over the countershaft. This reduces the overall height of the unit and eliminate or reduces the hump in the floorboards. While the change does not affect servicing, lubrication should be better.

Of interest to battery men is the new location for starting batteries. Instead of placing them under the





45  
76



98

4. Many cars have the battery under the hood. Pontiac mounting is shown.
5. Coil springs are used at the rear of the Buick chassis.
6. Buick has an automatic transmission.
7. The Cadillac method of shifting gears.
8. The new Cadillac 16 cylinder engine.
9. The electric hand gear shifter on the Hudson eight.

seat or floorboards, which always forms an excellent excuse to postpone adding water, a number of car manufacturers are now mounting the battery under the hood. This position not only makes it easier to replenish water and check the condition of the individual cells, but also to check for corroded cable connections.

Turning to the engines, we find that compression ratios have again been raised, making even greater care and accuracies necessary when

tuning engines. Piston clearances have been reduced. On the Auto-thermic pistons, skirt clearances are approximately .001 in. These smaller clearances, together with the anodized and tin-plated surfaces result in much longer engine life and also tend to increase the length of the breaking-in period. In the past, engines attained their maximum oil and gasoline economy after a few hundred miles. With today's engines, this condition is often not reached for 5000 or more miles.

A new compression ring designed for use in the top groove only is to be found on a number of the 1938 engines. This ring is of step cut cross section type with the step on the inner side of the ring at the top.

For the most part, bore and stroke dimensions are the same as last year. However, the Studebaker Six has a 1/16 in. longer stroke, while two models of the Chrysler cars have been increased 1/4 in. and 3/8 in.

The Cadillac 16-cylinder engine is completely new, and the two

(Continued on page 70)

## PROFIT-MAKING TOOLS AND EQUIPMENT

Accelerometers  
Ammeters  
Analyzers,  
Combustion  
Analyzers  
(Engine and  
Electrical)  
Bars, Grease  
Rack  
Bars,  
Straightening  
Bars, Towing  
Bins, Parts  
Blades, Saw  
(Hack)  
Blocks or Hoists,  
Chain  
Booths, Spraying  
Boxes, Tool  
Brushes, Carbon  
Removing  
Callipers and  
Dividers  
Cans, Radiator  
Filling  
Carriers, Storage  
Battery  
Chains, Block  
Chargers, Battery  
Clamps, Brake  
Lining  
Clamps, Hand  
Screw  
Cleaners, Engine  
Cleaners, Spark  
Plug  
Cleaners, Vacuum  
Clippers, Bolt  
Commutator  
Undercutters  
Compressors, Air  
Connectors, Ter-  
minal, Battery  
Charging  
Countersinks  
Cranes, Truck  
Creepers, Repair  
Cutters, Piston  
Chamfer  
Cutters, Washer  
and Gasket  
Depressors, Brake  
Pedal  
Dies and Screw  
Plates  
Disks, Abrasive  
Dispensers, Oil  
Dollies, Axle  
Drills, Breast  
Drills, Electric  
Drills, Twist  
Drivers, Bushing  
Drivers, Screw  
Dynamometers  
Extinguishers,  
Fire  
Extractors, Bolt  
and Screw  
Extractors,  
Bushings  
Files, Contact  
Point  
Files, Piston Ring  
Files and Rasps  
Fillers, Storage  
Battery  
Flushers, Radiator  
and Block  
Frames, Hack Saw  
Funnels, Metal  
Furnaces, Soldering  
Gages, Brake Drum  
Gages, Brake Shoe  
Gages, Crank Pin  
Gages, Cylinder  
Gages, Cylinder  
Compression  
Gages, Dial  
Gages, Engine  
Vacuum  
Gages, Muffler  
Back Pressure  
Gages, Piston Pin  
Gages, Thickness  
or Feeler  
Gages, Tire  
Pressure  
Gages, Wheel  
Aligning  
Hammers  
Heaters, Piston  
Hoists  
Hones, Cylinder  
Hones, Piston Pin  
Hooks, Car  
Lifting  
Horses and Trestles  
Hose, Air  
Hydrometers  
Instruments,  
Battery Testing

Irons, Soldering  
Jacks, Body  
Workers'  
Jacks, Car Lifting  
Jacks, Spring  
Jigs, Connecting  
Rod Aligning  
Jigs, Bearing  
Babbiting  
Kits, Tool  
Lamps, Trouble  
Lathes  
Lathes, Flywheel  
Lifts, Auto  
Lubricators, Hand  
Lubricators, High  
Pressure  
Lubricators,  
Spring Leaf  
Machines, Balanc-  
ing (Wheel)  
Machines, Brake  
Lining  
Resurfacing  
Machines, Brake  
Relining  
Machines, Clutch  
Rebuilding  
Machines, Commu-  
tator Turning  
Machines, Cylinder  
Reconditioning  
Machines,  
Degreasing  
Machines, Drilling

Machines, Glass  
Machines,  
Grinding  
(Brake Drum)  
Machines,  
Brake Drum  
Reconditioning  
Machines, Grinding  
(Crank Pin)  
Machines,  
Grinding  
(Cylinder)  
Machines, Grinding  
Brake Cylinder  
Machines,  
Grinding  
(Valve Seat)  
Machines,  
Piston Pin  
Hole Boring  
Machines, Piston  
Refinishing  
Machines, Tire  
Inspecting  
Machines, Tire  
Removing and  
Replacing  
Micrometers  
Motors, Electric  
Pans, Drip  
Pliers  
Pliers, Tire Chain

Polishers, Body  
Presses,  
Presses,  
Straightening  
(Wheel)  
Pullers, Axle  
Pullers, Bearing  
Pullers, Gear  
and Wheel  
Pumps, Oil  
Pumps, Gasoline  
Pumps, Tire  
Punches, Center  
Racks, Service  
Reamers  
Reamers, Bearing  
Reclaimers,  
Crankcase Oil  
Refacers, Valve  
Refillers, Brake  
Cylinder  
Regroovers, Tire  
Scrapers, Bearing  
Sets, Rivet  
Sears and Snips  
Sprayers, Metal  
Sprayers, Paint,  
Varnish and  
Lacquer  
Stands and  
Towers, Air and  
Water  
Stones, Contact  
Point Cleaning  
(Cont. on page 78)



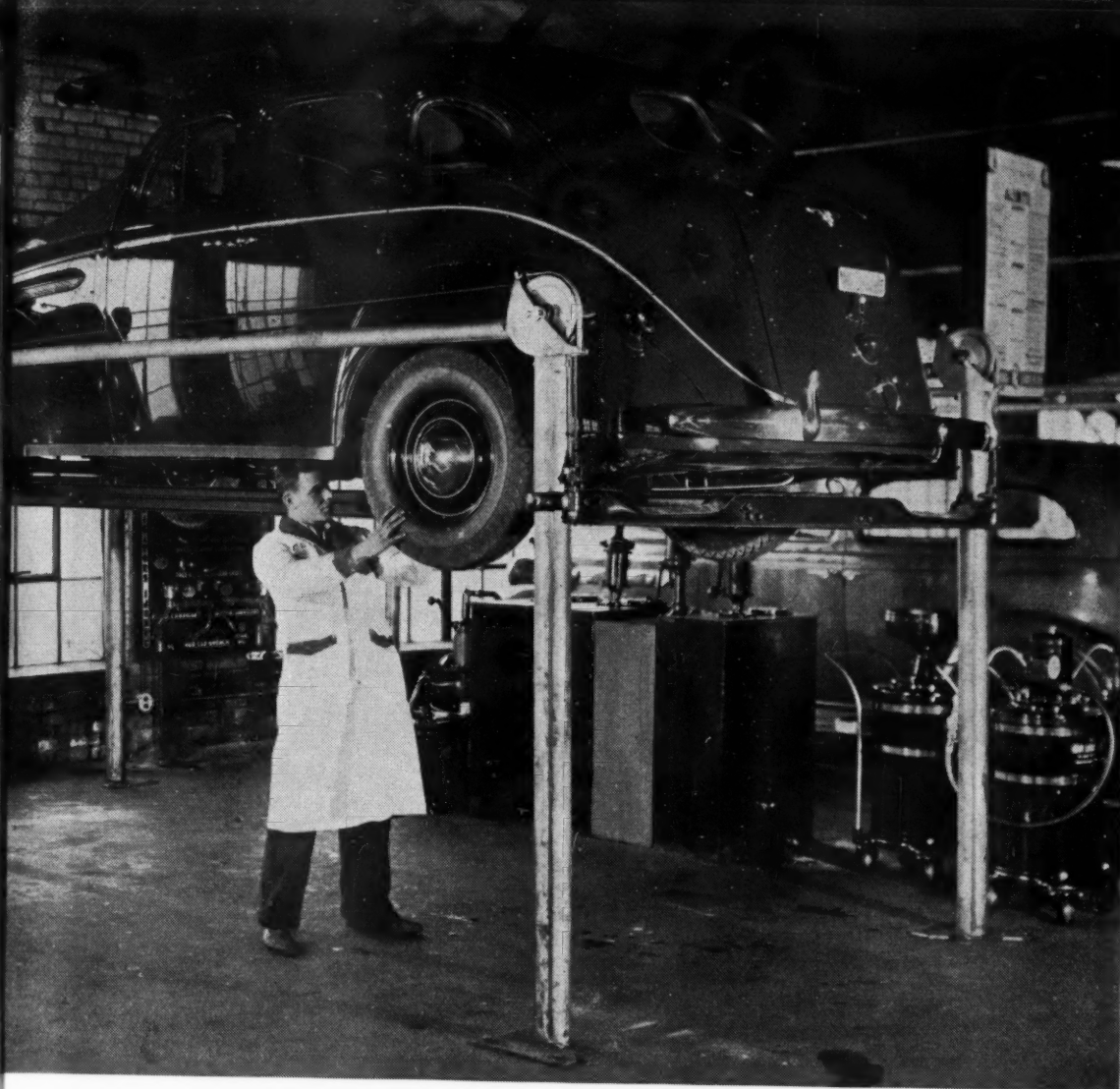
## Accessories—Tools Increase The

IT'S a fast moving year. The modern world has its foot on the gas and it's roaring wide open—offering a swell ride to those who can stand the pace—ready to mow down any who get in its way. Business is building rapidly for the repair shop that keeps pace with the times. Business is slumping rapidly for the shop that falls behind.

Customers are moving rapidly, too—moving to the modern repair shops that keep up-to-date with equipment, parts, tools and accessories.

There's money in the automotive business and the biggest part of it is going to the shop that's on its toes—the shop that's awake to the profit possibilities in having





## —Parts—Equipment Service Dollar

complete, modern equipment, in having the right tools for each job, in having a complete parts assortment and in having a full line of fast-selling accessory items.

MOTOR AGE presents here a list of equipment, parts, tools and accessories which have been instrumental in bringing extra business to many repair shops. Although no shop would find it necessary or advisable to have everything listed here, it will serve as a guide to the repair man who is anxious to build his business—and his profits.

Check the list against your inventory. It will help you to decide what you need in order to be among the big profit makers this next year.

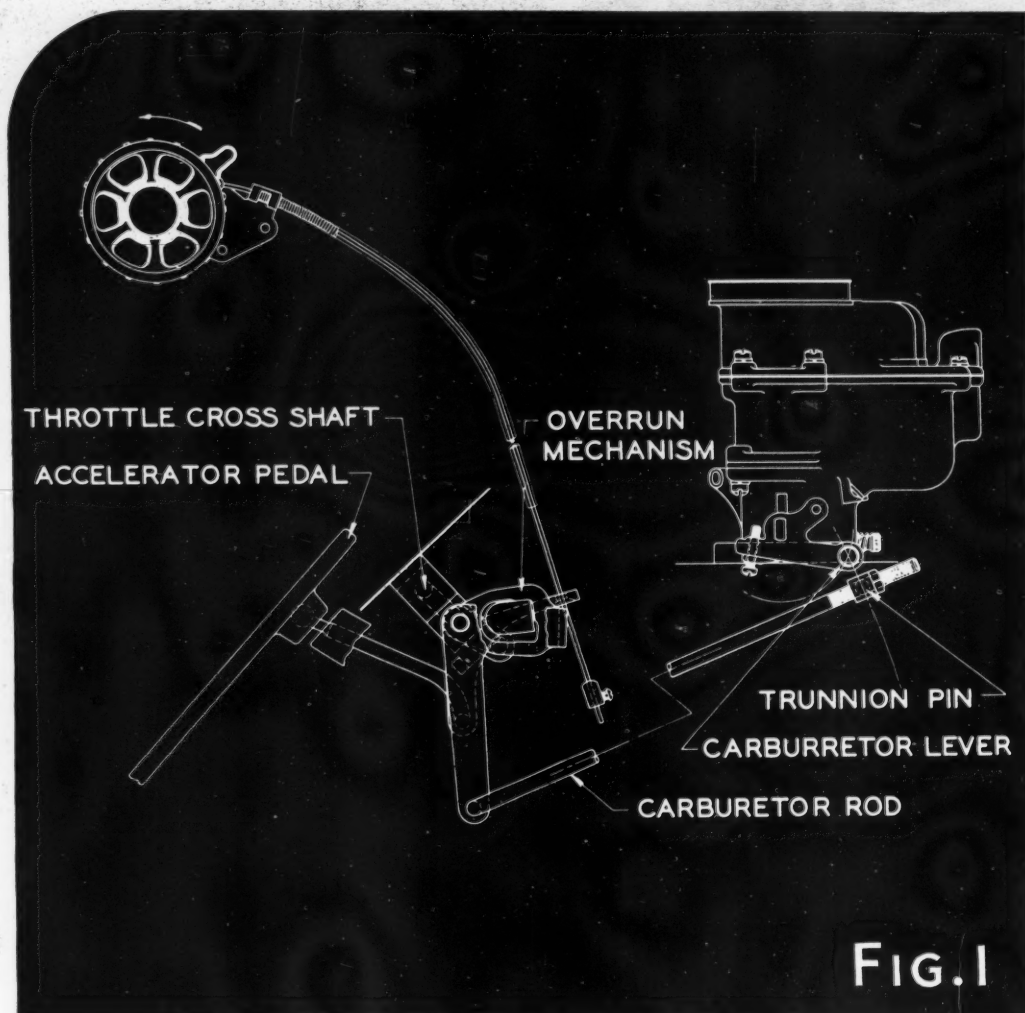
### THE PARTS YOU NEED TO DO THE JOB

Ammeters, Instrument Board  
Anti-Rattlers  
Aprons, Splash  
Armatures  
Arms, Breaker  
Asbestos, Sheet  
Axles  
Balls, Gear Shift  
Lever  
Batteries, Storage  
Bearings, Anti-Friction  
Bearings, Connecting Rod  
Bearings, Main  
Belts, Fan  
Bolts, Connecting Rod  
Bolts, Spring, cen.  
Bolts, Spring  
Shackle  
Bolts, Steering  
Knuckle  
Brakes, Power  
Amplifying Unit  
Brushes, Generator, Horn and Starter

Bumpers, Automobile  
Bumpers, Spring  
Bushings  
Cable, Brake  
Cable, Ignition, Starting and Lighting  
Cables, Storage  
Battery  
Caps, Crankcase  
Breather  
Caps, Gasoline  
Tank  
Caps, Hub  
Caps, Radiator  
Caps, Tire Valve  
Carburetors and Parts  
Carriers, Luggage  
Cases, Lamp Bulb  
Cement, Top  
Repair  
Chains, Timing  
Chains, Non-Skid  
Channels, Felt  
Chargers, Battery, for Home Use  
Clamps, Hose  
Cleaners, Air  
Cleaners, Windshield  
Clocks  
Cloth, Abrasive  
Cloth, Rubber

Clutches, Automobile  
Coils, Generator  
Field  
Coils, Ignition  
Compounds, Radiator Rust  
Preventing  
Compounds, Tire  
Repair  
Compounds, Valve Grinding  
Condensers, Ignition  
Condensers and Relief Valves, Radiator  
Controls, Choke (Automatic)  
Controls, Generator (Automatic)  
Cores, Radiator  
Cork, Sheet  
Covers, Distributor  
Covers, Spring  
Covers, Tire  
Cut-Outs, Reverse  
Current  
Decarbonizers, Engine  
Deflectors, Draft  
Dimmers, Glare (Windshield)

Disks, Clutch  
Disks, Universal Joint  
Disks, Wheel  
Distributors, Ignition  
Dovetails  
Drives and Parts, Starter  
Drums, Brake  
Enamels  
Expanders, Piston Ring  
Expanders, Piston Skirt  
Extinguishers, Fire  
Fans, Electric  
Fasteners, License Tag  
Fenders  
Fittings, Lubricating  
Fittings, Tube  
Flashlights or Lanterns  
Floats, Carburetor  
Fluid, Brake and Shock  
Absorber  
Flux, Soldering  
Frames, License Plate  
Fuses, Electric  
Gages, Gasoline—Auto Tank Type  
Gages, Water  
Temperature Indicating  
Gaskets  
Gears  
Gears, Igniter and Oil Pump  
Gears, Starter  
Gears, Steering  
Gears, Timing  
Gears, Transmission  
Gears and Pinions, Rear Axle  
Generators, Electric Lighting  
Glass  
Graphite  
Guards, Bumper  
Guards, Fender  
Splash  
Guides, Fender  
Guides, Valve (Engine)  
Heads, Cylinder  
Horns  
Hose, Radiator  
Hubs, Wheel  
Jacks, Car  
Lifting  
Joints, Universal  
Keys, Valve Stem  
Keys, Switch and Starting  
Lacquer  
Lamps, Cowl, Fender, Tail, Parking, etc.  
Lamps, Fog  
Lamps or Bulbs  
Lamps, Spot  
Lenses, Lamp  
Lighters, Electric  
Cigar  
Lining, Brake  
Links, Shock  
Absorber  
Links, Spring  
Shackle  
Locks  
Lubricants  
Lubricators, Combustion Chamber  
Mats, Floor  
Mats, Running Board  
Mirrors  
Molding, Drip  
Molding, Running Board  
Mufflers, Exhaust  
Nuts  
Oilers, Spring  
Oils, Lubricating  
Oils, Combustion Chamber  
Ornaments, Radiator  
Packing  
Packing, Valve (Engine)  
Pads, Pedal  
Pads, Seat  
Paints  
Paper, Abrasive  
Parts, Brake  
Parts, Coil and Distributor  
(Cont. on page 67)



# Adjusting the Automatic Transmission

by **BOB HANKINSON**

**Here is the inside dope on the short-cuts to be followed in the adjustment of the automatic transmission used by Oldsmobile and Buick.**

ONE of the latest mechanical features with which the mechanic is expected to be familiar is the automatic transmission introduced by Oldsmobile the latter part of the 1937 production, and which is to be found on the 1938 models of Oldsmobile and the 40 Series Buick as optional equipment. The interest that has been displayed in this development by the general public at the various shows throughout the country indicates that it is apt to be specified as equipment for a large number of cars that will be bought this year. It is important, therefore, that mechanics learn what it is all about

so that they will be able to intelligently service the unit.

While the transmission at first glance appears to be very complicated, its construction will be greatly simplified if the mechanic will recall the construction of the planetary transmission used in the Model T Ford car of "the good old days." This automatic transmission is built along the same lines except that it has two planetary units instead of one, and one brake band for each unit instead of the

three bands used in the Model T. Instead of shifting gears with the clutch pedal as in the Model T, the gears in the automatic transmission are shifted automatically by oil pressure. The gears selected depend upon the position of the shift lever located just under the steering wheel, plus the position of the accelerator pedal and the speed of the car.

The transmission unit is made up of the head gear set, which includes the clutch gear and the sliding



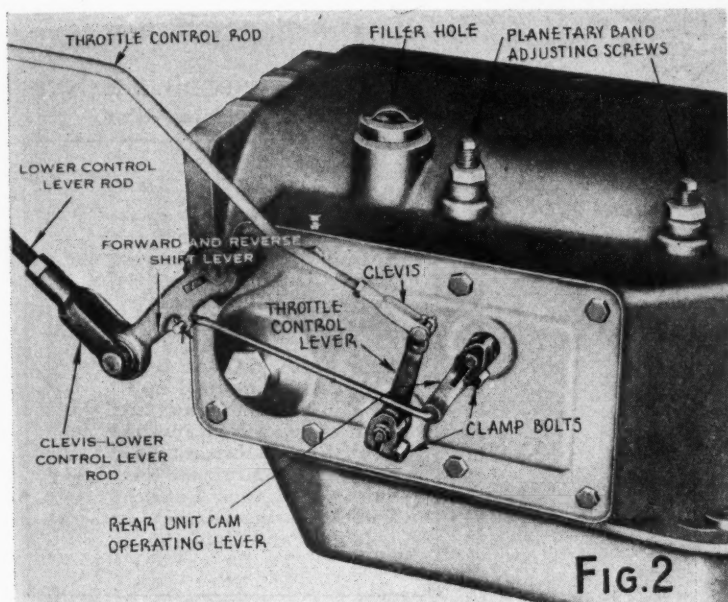


FIG. 2

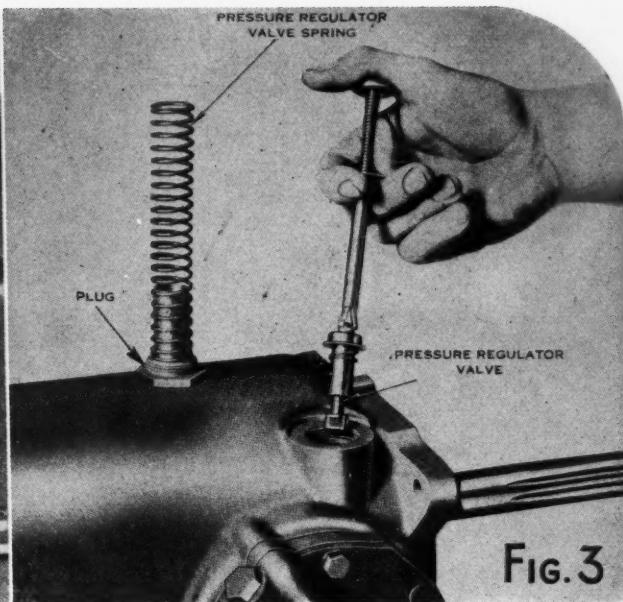


FIG. 3

gear which determines the reverse or forward movement of the car; the front planetary unit with the servo unit to actuate the band; the rear planetary unit with a corresponding servo unit; the oil control unit, which includes three oil valves for distributing the oil pressure to effect the gear changing; the oil pump, which supplies lubricant under pressure to the various parts of the transmission in addition to supplying pressure to the oil control unit; and the governor control, which governs the timing of the gear shift through the front planetary unit, in relation to car speed.

Before attempting service operations on the transmission, particular attention should be given to the engine tune-up. This is especially true of the carburetor and the throttle control linkage, since the throttle position controls the shifting of gears in third and fourth

speed. The incorrect adjustment of the length of the control rods will change the speed at which the shift is made: for example, if the rod is too short, the shift will take place at a lower engine speed than is intended. Since the throttle overrun mechanism is attached to the toe board, any shifting of the body on the frame will affect the transmission shift. It is important, therefore, that body bolts be properly tightened. If for any reason it has been necessary to remove the carburetor, the linkage must be carefully checked when the carburetor is reinstalled.

A complete check of the throttle control should start at the carburetor, after first disconnecting the throttle control rod at the transmission. Referring to Fig. 1, push the accelerator pedal down to the floor, and hold it there by a block of wood or some similar means. Remove the cotter pin and discon-

nect the trunnion pin from the carburetor throttle lever. Move the carburetor lever to the wide open position as shown in the illustration, and push the throttle rod backward as far as the overrun mechanism located at the throttle cross shaft will allow. The trunnion pin should then be adjusted so that it will just enter the hole in the carburetor throttle lever. Install the trunnion pin, being sure to use a new cotter pin.

Release the accelerator pedal, and lift the fast idle cam on the carburetor to be sure that the idle adjusting screw is bearing against the low idle step on the cam.

After making this adjustment, the throttle control rod running from the cross shaft to the transmission should be checked as follows: referring to Fig. 2, disconnect the clevis from the throttle control lever by removing the

(Continued on page 68)

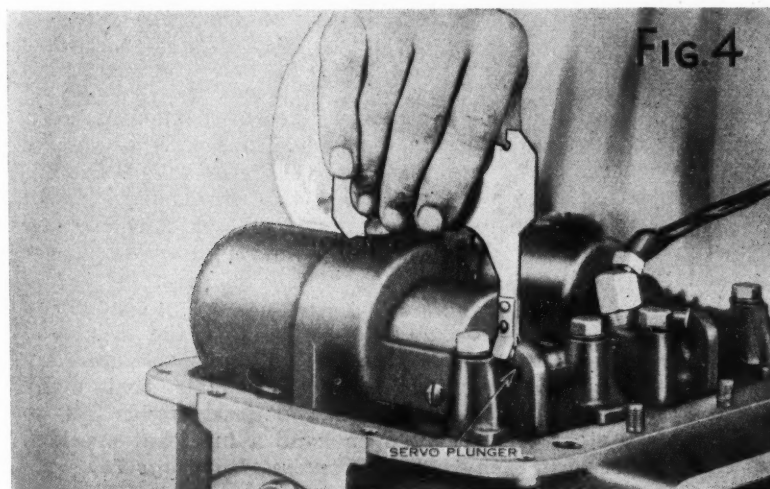


FIG. 4

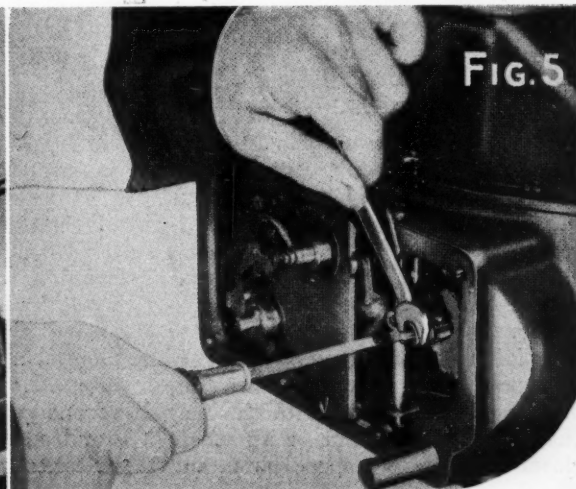


FIG. 5



**MINIMUM REQUIRED LUBRICANTS**  
(Excluding Motor Oils)

SAE 70 Motor Oil  
Chassis Lubricant  
Water Pump Grease  
Spring Spray Grease  
Universal Joint Oil  
Universal Joint Grease  
Gear Lubricant SAE 80  
Gear Lubricant SAE 90  
Gear Lubricant SAE 110  
Gear Lubricant SAE 160  
E. P. Gear Lubricant SAE 80  
E. P. Gear Lubricant SAE 90  
E. P. Gear Lubricant SAE 110  
E. P. Gear Lubricant SAE 160  
Sp. Steering Gear Lubricant  
Wheel Bearing Grease  
(Fibre and Smooth)



**A Check-up on lubricants is necessary  
for the service man who wants to - - -**

*by* **BERT POLLOCK**

## **“BLOCK THAT KICK”**

**“BLOCK that kick!”**—The roar that has been heard at innumerable gridiron contests this fall is finding its echo in the minds of service men. These men are attempting to find means of blocking the “kicks” of customers complaining about improper lubrication—for customers ARE beginning to complain. Motor car manufacturers and petroleum companies are impressing the motorist with the fact that the newer cars, with their closer fitting, high speed parts and

hypoid gears, need special lubricants at special points and not just any grease anywhere.

However, few places offering lubrication service are equipped to do a complete job on many of the cars on the road today. A survey made by the Valvoline Oil Co. revealed that of all the establishments in the country advertising lubrication service only nine-tenths of one per cent (roughly, one in a hundred) maintained a stock of lubricants sufficient to service each

car as specified by its manufacturer. In addition, the survey revealed that the average establishment has only half the various grades of lubricants which are considered as the minimum required for proper lubrication of all cars.

About the only thing common to all establishments is the possession of some sort of chassis lubricant. It is understandable that many lubrication outlets might fail to keep on hand a lubricant specified

*(Continued on page 74)*





***"I can't give you a new car this year, darling, but I'll have the valves ground on your old one!"***

# SELLING



## Picture Postcards

WE are always attracted by pictures of neat looking service outlets. The one shown above caught our eye this month, not only because of its novelty in being built in the shape of a huge automatic recording gas pump, but also because of its sparkling cleanliness.

This station is on the outskirts of Maryville, Mo., and belongs to the Phares Oil Co. which, so they tell us, is very anxious to obtain the business of the many trucks passing each day. To do this, attendants at the station jot down the license numbers of trucks roaring by, locate the truck owners' names through the files at the local sheriff's office and then mail them personal postcards showing the picture of the station we reproduce

here for the rest of you to see.

They didn't tell us just what they wrote on the back of the cards, but it must be good to bring in the new business they claim to have gained by this method. We'll agree that an identifying picture on anybody's direct mail efforts is a mighty good idea.

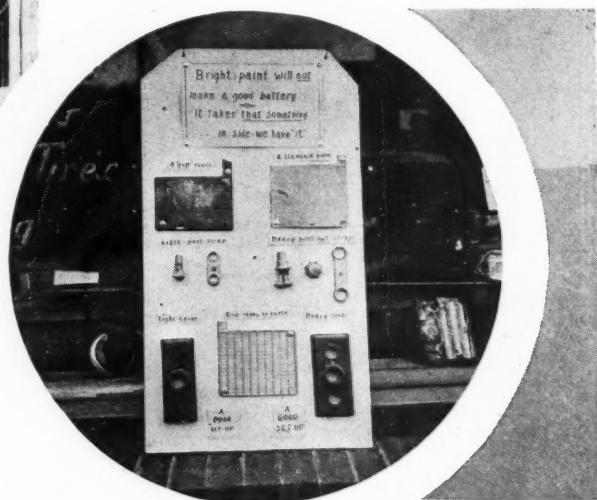
The Phares Oil Co. makes a good bid for attention by keeping this novel station well lighted by night. They've also made sure they can handle the truck traffic by having plenty of space.

## Novel Battery Display Board

CARL HODGES is a busy gentleman from Wisconsin who has fine merchandising ideas. Carl hails from Fort Atkinson and knows that good display is a big help in increasing the profits. He has erected a battery display board which tells a significant story on battery construction and has found it a help in selling batteries.

The display consists of parts of cheap or "gyp" batteries lined up alongside the corresponding parts of batteries of good quality. Captions beside the parts on the board point out the differences between them.

In order to make sure that everyone who visits his shop sees the display and that it does not become just an easily overlooked piece of furniture, Carl moves the board to different positions about the garage.



Last spring Mr. Hodges took a display booth at a local Home Show and put his battery board there. He was kept busy answering questions on battery construction and care asked by many interested motorists. In fact, Mr. Hodges did such a good job of battery talking that many a listener received the impression that here was a knowing fellow indeed. Which was not wrong. As a result, many of those listeners brought their cars to his shop for repair work.

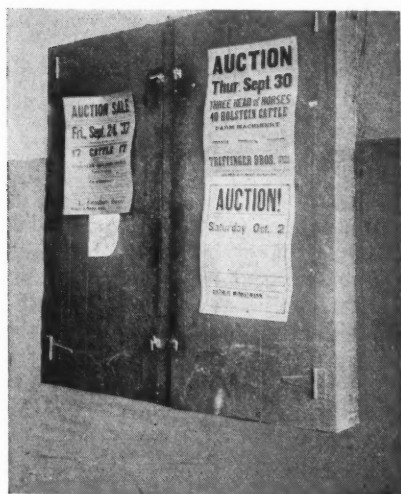


# SERVICE

## Free Bulletin Board

MR. E. W. BOSCH, who owns a garage in Durham, Wis., may not get very enthusiastic about our chatter on direct mail, for he has found a way to get business from the farmers around Durham without leaving his garage or mailing so much as a penny postcard. Mr. Bosch has arranged the door of a wooden tool case, which stands just inside the garage entrance, as a bulletin board where farmers may post their auction bills, farm meeting notices, and such. There are four or five notices of this kind on the Bosch tool case at all times, and most of the farmers who come to town stop in for a look.

Many farmers who come to study the bulletin board become interested in one of the used cars handled at the garage. Or else, seeing some repair work being done, decide to have their



present cars put in better shape. The board also helps Mr. Bosch to lengthen his list of acquaintances.

This garage owner, or one of his men, attend many of the farm auctions and meetings in this neighborhood just to keep in touch with farm events. At auctions, for example, automobiles are often sold. The Bosch salesman, jotting down the names of unsuccessful bidders, calls on them later and often succeeds in selling a used car.



## Cool Fall Nights and Cold Winter Days and Nights Are Creeping Up On Us

NOW IS THE RIGHT TIME to think about a complete check on your car, which has served you so well thru the past Summer.

YOU CAN SAVE MONEY by attending to this NOW: before you have starting trouble and poor performance; as well as uncomfortable Motoring.

THIS SPECIAL OFFER is made possible as we are not rushed with Service calls at this season and are in position to render our best service carefully and thoroughly.



## Winterizing Folders

THE Kirn Auto Parts Co., automotive wholesaler of St. Louis, Mo. is much interested in direct mail. C. T. Bertholdt of that company sent us an attractive little folder which was made up for some of Kirn's good customers. The folder was used to urge motorists to come in and take advantage of a special price for a check-up on the whole car to prepare it for winter driving.

We've reproduced the cover on this page. Inside the folder is a picture of an unfortunate gentleman caught unprepared by a sudden freeze and snow, together with an imposing list of all the things that will be done on a car for the special price.

Choosing a stock folder carrying brown illustrations on the cover, the printing was done in red and blue. Thus they were able to give the impression of a three color job while only paying for two. A neat trick to remember when you're planning your next direct mail campaign.

Mr. Bertholdt tells us "past experience has shown that there is very much activity in merchandise sales after a mailing of this class." We believe it.

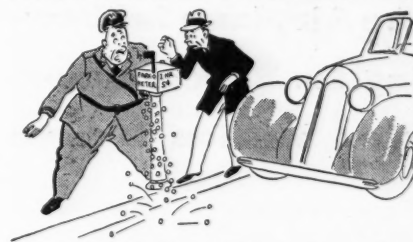
by BERT POLLOCK

THESE are practical merchandising ideas that have been used by maintenance men — just like yourself. Workable ideas gathered from here, there and everywhere and presented for practical application to your business. Use them and write us your experience for publication herein.

## Better than the Jack Pot

MR. GEORGE TAPPAN of Binghamton, N. Y., tells us that a traveler from Houston, Tex., told him that a garage owner in Houston told the traveler about a scheme the garage owner developed for bringing in some extra business. That's a very round about way to get information, and somewhere along the way the name of the garage owner has been lost. However, we think the rest of the story is still intact.

Houston, being a modern metropolis, has invested in a number of those new parking meters wherein the motorist deposits a nickel for the privilege of parking for 30 minutes. Of course, the gentlemen with the brass buttons write a good many tickets because no end of things hap-



"Holy Smokes! The Jack-pot!"

pen to prevent the motorist getting back to his car before the bell rings. That's where our unknown garage owner got his idea.

He went scouting around the cars in the meter area. When he found a car where the time limit was just about to expire, he would drop a nickle in the meter and place in the car a card with the following message:

"Dear Motorist—Your parking time expired. To relieve you of the trouble of appearing in police court we have deposited a nickel in the meter.

XYZ Garage. Address....  
Phone....."

No advertising was included, and no mention of obligation was made. Nevertheless, sales increased nicely.

Incidentally, the license number of the car was taken to aid in building up a good mailing list for future use.



Right: Bob's Airmail Service in Los Angeles uses a large air-transport plane for a pump canopy

Below: A roadside service station, between Knoxville and Norris Dam, Tenn., fashioned like an airplane

# Grounded Planes



## Along the Highways the Airplane Is Showing Its Effect on Service Station Design

**B**OB SPENCER'S service station in Los Angeles, which opened for business with America's largest air-transport plane for a pump canopy, is doing a \$10,000 gasoline business a month.

This plane, designed by Anthony Fokker, originally cost \$110,000. It has a wing spread of 99 ft., and spent 2500 actual flying hours in the air.

Grounded now, as Bob's Airmail Service, Mr. Spencer has taken care to maintain it just as it flew . . . completely and correctly equipped. Visitors are welcome to go into it and inspect it. An attendant accompanies them to explain everything and answer questions. In one year's time visitors had worn out two wood floors such as are in planes, then a quarter-inch torpedo plate iron floor was installed.

The necessity for new floors answers the question, "Did the plane pay as an advertisement?" For this was the thought back of the expensive idea of using the plane as a station canopy.

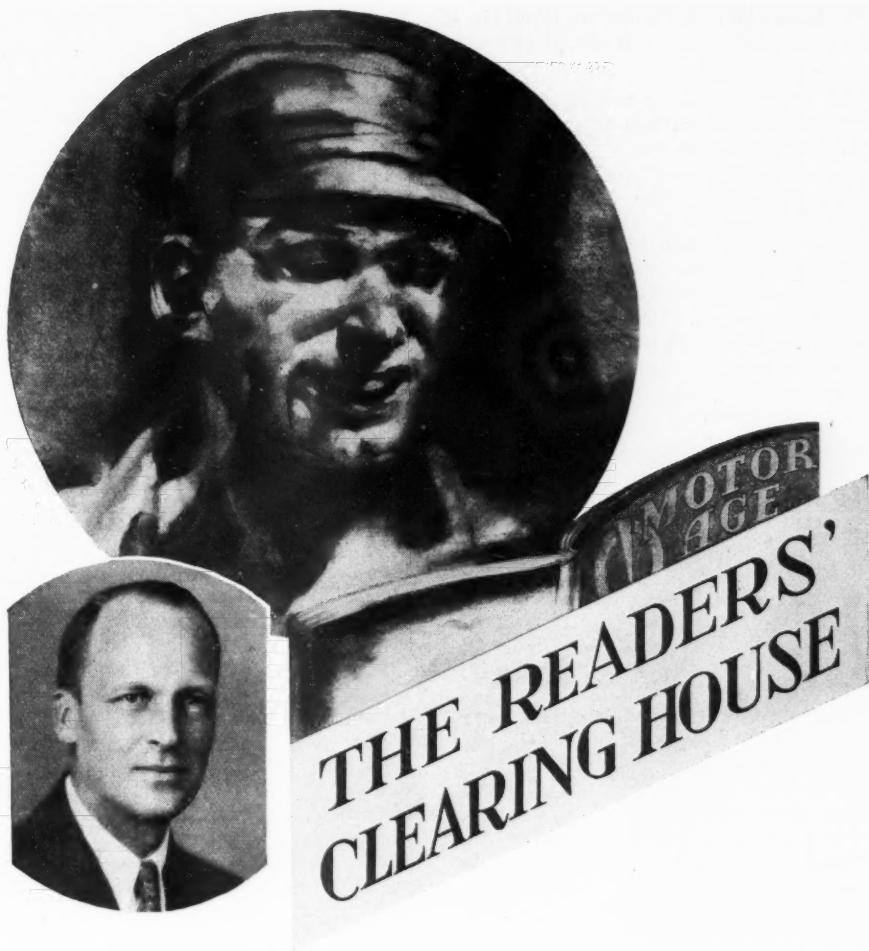
The ship is linked with Mr. Spencer's selling plan. Visitors come to visit the ship, after which nothing is more natural than to visit the various service departments.

Fourteen men work at the station, which is open 24 hours a day. The men at the pumps wear aviator uniforms, while the men in the other departments wear white coveralls. When a car drives in the station, three uniformed men step forward to service it. One services the radiator and tires, while another fills the gas tank, leaving the third free to use his time for selling. A glass case of automotive

merchandise by the pumps makes it comparatively easy for the salesman to suggest more than one accessory while he is polishing the windshield and talking with the customer.

In commenting further, Mr. Spencer said, "Thirty-six thousand cars pass this station daily. As people drive along, the plane catches their attention. Its revolving propellers, fenced in for safety, make a living, vibrant ship of it. As they go in and look it over they are interested. Thus we have something to talk about, a common interest, which makes a happy approach to our presentation of service. In this way it is easy to show our service facilities. Our crew is always right there to take care of any need in a quick and efficient manner." As usual it is the unusual that helps build profits.





**BILL TOBOLDT, Editor of MOTOR AGE, conducts the Readers' Clearing House. He presents some of the thousands of questions asked by readers of Motor Age together with a practical analysis of the difficulties in his replies. You, too, are cordially invited to send us your problems.**

## PERFORMANCE FACTOR

Will you please give me the formula with which you compute displacement factor as included in Mechanical Specifications on page 58 of your August issue? J. M. Orr, 214 Lexington Avenue, Pittsburgh, Pa.

IN accordance with your request, I am giving you the performance factor as given in the specifications contained each month in MOTOR AGE:

$$F = \frac{3825 \times RD}{Wd}$$

3825 equals composite constant

R equals rear ratio

D equals piston displacement

W equals weight of car plus 400 lb.

d equals effective tire diameter.

By means of this formula it is possible to get an approximate comparison of the performance of the various cars.

## HARD PEDAL

I am a reader of MOTOR AGE and look forward to the helpful articles in the Readers' Clearing House each month. Now, I am calling for help. I am a mechanic and school bus operator. I am driving a 1933 two-ton International bus, Model B-4, 185 in. wheelbase, 8.25 x 20 in. tires. When empty it weighs 8,000 lb., when loaded to its capacity it weighs about 7 1/4 ton. The brakes are mechanically operated with cables and rods, without air booster.

I had the drums turned perfectly smooth and free from scores, relined the shoes with a heavy duty lining, re-centralized and adjusted brakes on all four wheels, adjust all wheel bearings. The rods and cables were not tampered with. The pedal goes up solid and is hard to press in. It doesn't matter how hard the pedal is shoved it only stops very poor. They just

won't take hold. Can you tell me how to make them take hold quick? S. J. Callaghan, Craigsville, W. Va.

WITH reference to the brakes on your International bus, the first thing I would suggest is that you make absolutely sure that all the cables are perfectly free and the best way to do this is to remove them completely and clean out the conduits and thoroughly lubricate the cables. After having done that, I would check the clearance of the shoes all around the drums so as to make sure that you are getting the correct clearance. There is a possibility that when the drums were turned down that so much metal was removed that it will be necessary to use either thicker lining or to install some shim stock behind the lining. If such is the case, be sure that you do not install too much shim stock—otherwise the shoes will contact only at the heel and toe.

## THIS ONE "SETS"

We have here a number of 1936 Chevrolet motors that "set" after a normal run of any period of duration. Usually it takes the combined power of a tow car and the starter to break them loose again but occasionally the motors have to be taken down completely. We found that this was not caused by high speed driving of the motors when new. For example, in one instance, the motor had been driven over 25,000 miles and still continued to have this trouble.

While we have never taken down any of these engines, a number have been torn apart and the cause said to be everything from a film left on the pistons at the factory to tight push rod sleeves due to heating—but in no case has a cure been found.

Could you give us any information with regard to the cause and cure of this? I might add that these motors set on an idling speed. O. J. Offerman, Economy Oil Co., 123 Center St., Beaver Dam, Wis.

FIRST of all, I am inclined to believe that the trouble is most likely caused by anti-freeze getting into the lubricating oil. If such is the case, you will find a quantity of brown material in the crankcase looking not unlike shellac.

To overcome this condition it will be necessary to very thoroughly clean out the entire crankcase, pistons and rings and all oil passages.

There is also a possibility on some of the engines that do not have very much mileage on them, that the trouble might be main bearing condition which can be overcome by the installation of new main bearings. However, this "swelling" of the main bearings usually occurs on cars with only a small amount of mileage and if the cars have gone in excess of 10,000 miles, I am quite sure that the trouble is caused by anti-freeze.

## SLIPS OUT OF SECOND

I have been reading the **MOTOR AGE** for nearly two years and I have found many helpful articles in the **Clearing House**. Now I am in trouble.

I overhauled a 1934 Plymouth transmission some time ago and now it slips out of second gear and I would like to know what might be wrong with it before I tear it up again. Here are the parts that I installed: Spline shaft, clutch shaft and main drive gear assembly, front main shaft bearing, spline shaft pilot bearing, free wheeling cam to bearing assembly, free wheeling rollers, free wheeling shaft pilot bearing, gaskets, shims, retaining rings, etc.

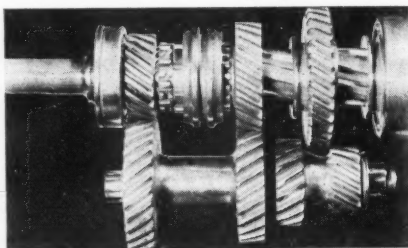
There are only two things that I am not sure about. There was just a very slight amount of endplay in the second gear on the spline shaft. Also, the rear main shaft bearing was slightly loose. Could either of these cause it to slip out of second? If not, what would you suggest might be wrong with it? Any information you could send on assembling this transmission would be appreciated.

I was interested in two articles in July **MOTOR AGE** about increasing compression and the results. I have a 1921 Model 116 Packard 6 that is in pretty good shape. I understand that the speed on this motor is supposed to be 1900 r.p.m. The car will do just 59 m.p.h. by speedometer which has just been overhauled and adjusted. Do you think that increasing the compression on this job would prove injurious to bearings, wrist pins, etc.? If not, how much should I have the head planed down to get the best results? Would I have to use colder running plugs or a hotter coil with this higher compression set up? Could I use regular first grade gas? How much speed should the higher give the old crate?

I also have a customer who wants to increase the compression on his Whippet Four 6 to 1 ratio. Would you advise this high a compression? How much should the head be planed to ac-

complish this? J. L. Beyan, Shell Service Station and Garage, Collbran, Colo.

IT is absolutely essential that the endplay of the second speed gear, free wheeling drive shaft and the countershaft gears be correct on your 1934 Plymouth. The endplay of the second speed gear is controlled by shims at the snap ring which holds the transmission clutch gear in place. A maximum amount of endplay at this point is .002 in. Unless the endplay is properly adjusted by the shims, difficulties may be experienced in negotiating hills with the free wheeling unit locked out.



Endplay in the countershaft gear assembly is controlled by thrusts placed at each end of the countershaft cluster and the endplay should not be more than .005 in.

In addition to the above, make sure that the clutch shaft is not sprung and that the cap screws securing the clutch housing to the flywheel housing are all pulled up the same amount. I think it would also be advisable for you to replace the rear main shaft bearing since you mentioned that it was slightly loose.

I am glad to hear that you liked the articles on increasing compression. On your 1921, Model 116 Packard, I suggest the installation of aluminum pistons and planing off approximately .125 in. from the cylinder head. Increasing the compression will not increase the load on the bearings and it will probably be necessary for you to use colder running plugs.

You can also remove approximately .125 in. from your 1928 Whippet

cylinder head. This will bring the compression ratio up to approximately 5.5 to 1.

## METERING JETS

I am the mechanic for the Westfield Storage Battery & Supply Co., Inc., who have used your **Flat Rate Manual** for the last five years. I have always found it helpful and could hardly get along without it.

I have a little problem I would like to clear up. I recently ground the valves on a 1931 Buick 60. Installed all timing gears and new clutch. When removing the exhaust and intake manifold, the arm or lever that operates the metering pin of the carburetor got broken. This arm or lever fits on the throttle shaft of heat riser which is round. I got a new one from a Buick agency but it was a later type. I had to fill the flat part of the hole round to fit it on the old shaft.

The owner came back in a couple of days and said the car ran terrible. I took it out and found it jerked going 5 to 20 m.p.h. and would spit back now and then at high speed. I double checked everything. Valve clearance, points, timing coil, put in other set of points and a new high speed coil but without any luck. I had the Buick service manager in our town take a ride and he said it was carburetor trouble. I took the carburetor off, cleaned it and used all new gaskets from Buick, overhauled the fuel pump. There was a new heat riser installed about six weeks ago—that looked O. K. The man who installed the heat riser used the old throttle shaft (round one).

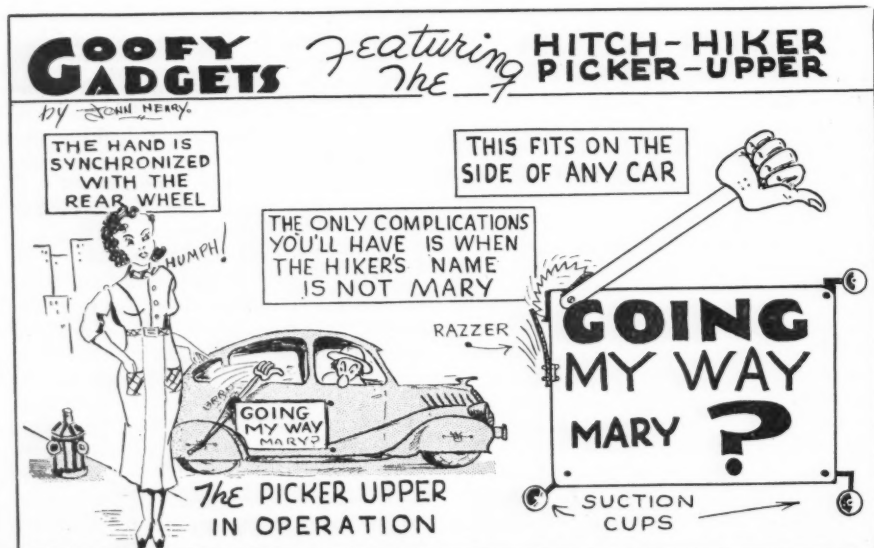
The Buick man said they had that trouble in some of the 1931 models and they installed shims between carburetor and heat riser.

There were two steel shims in the old gasket which I installed with new gaskets between carburetor and heat riser. This helped a little but it was far from right. As far as I could see, the only thing these shims did was to raise the metering pin in the carburetor.

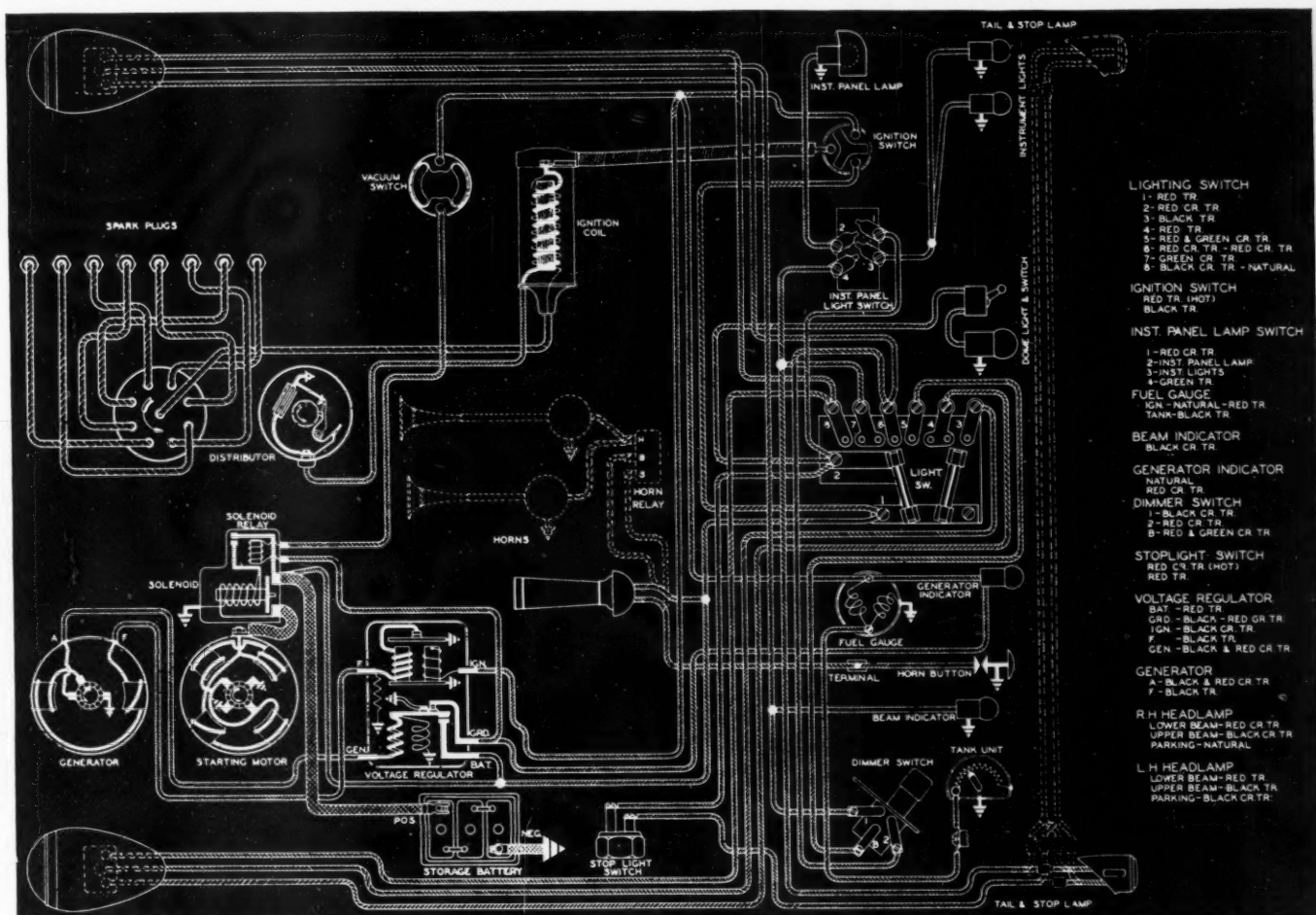
I referred to your Marvel calibration on page 40 of the **Flat Rate Manual**. In the upper right corner it shows an illustration of metering the metering pin calibration, also column 02. It calls for 21/64 in. clearance between groove and float cover. In order to get this clearance, I had to cut a piece out of the metering pin link. It does not say whether this measurement is made with open or closed throttle but I made it with closed throttle. Is that right?

The car ran O. K. after I did this but he only gets six to seven miles to a gallon. He got 12 and 13 miles to a gallon before.

I have checked about eight Buicks since then and none of them have anywhere near that clearance on their metering pins. The grooves on these







1937 Pontiac Wiring Diagram

I have checked are down in the covers, with closed throttle.

The metering pin and lever are the only things I actually changed on this job. Would changing the metering pin have any effect on mileage? It made the car run all right but it gives poor mileage. How is it that none of the other cars I looked at have this clearance between groove and cover on metering pin? The rivet of the metering pin is about .010 in. above cover on the ones I looked at. M. W. Seal, Mt. Ave., Scotch Plains, N. J.

I THINK the difficulty you are experiencing on the 1931 Buick 60 is caused, at least in part, by the fact that you shortened the metering pin. I would suggest that you obtain a new metering pin and install it so that with the throttle closed, the groove in the pin is then flush with the float bowl cover. I know this isn't exactly according to specifications but it is a practice followed by carburetor specialists.

In addition, I would make sure that you do not have any leaks between the intake manifold and the cylinder block. I would check these connections over very carefully and also check over the intake valves and valve guides for, if these are excessively worn, it would also result in the trouble you are experiencing. The reason for this is, of course, that any leaks

in the intake system necessitates a richer carburetor adjustment which, in turn results in poor gasoline mileage.

Another point that I would check is the high speed jet and the intermediate high speed jet. It is possible that when you were working on the carburetor that you re-installed these two jets in the reverse position. You will note from the illustration on page 40 of the Chilton Flat Rate Manual that the high speed jet is the taller one of the two and its tip should be immediately under the edge of the air valve.

## TOO MUCH BRAKE

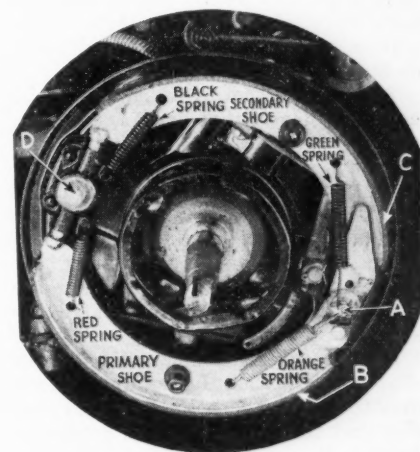
I am wondering if you can help me out of some trouble that I am having with two Ford cars. The first one is a 1937 model 60 and the brakes are so bad that it is practically impossible to put them on without just about going through the windshield. How it isn't one or two wheels that are doing it, but all four, and they are all even.

I have had two wheels off and everything looks good. No grease and the lining is nice and smooth and looks as though it was wearing even, but as the car hasn't been far, it is rather hard to tell about that.

The second car is a 1930 Model A, Coupe and the front brakes have de-

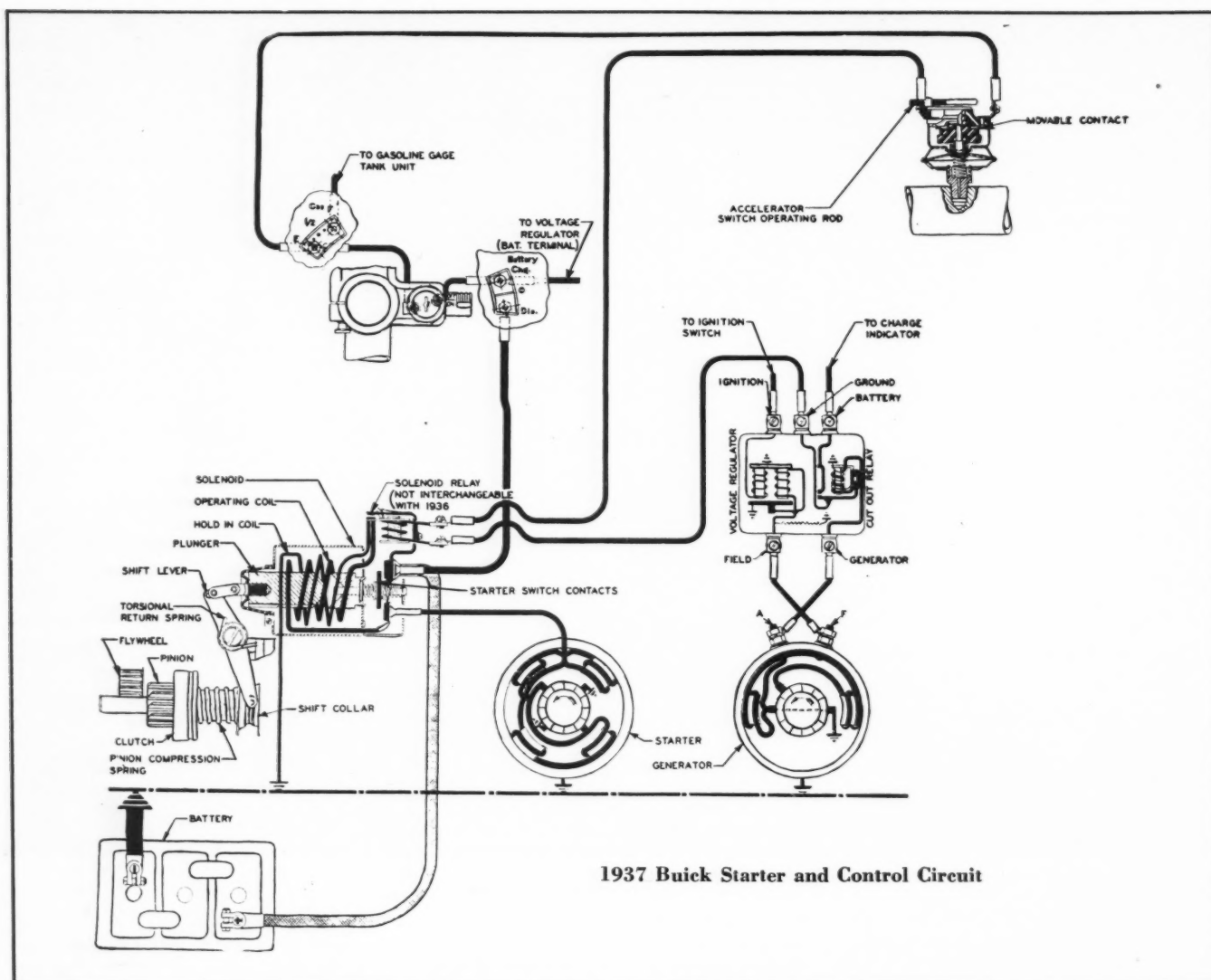
veloped that terrible clattering that shakes the whole car when you put them on easy, but when you make a quick stop they are O.K.

These brakes had been lined by someone else a short time ago, so the lining is good and I have tried cutting off the ends of the lining on the bottom ends, also tried bending up the



ends of the bottom support, and put a whole new outfit on the rear of the wishbone.

The spindle bolts are some loose but not at all bad. Kenneth Bristol, Belchertown, Mass.



1937 Buick Starter and Control Circuit

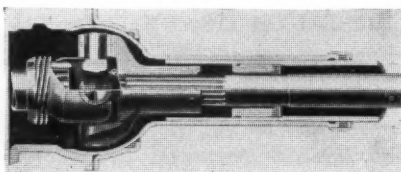
ON your Model 60 Ford, I am quite sure that you will find the trouble to be caused by poor shoe centralization. In this connection I am sending you instructions covering the adjustment of these shoes and I would suggest that you follow them through very carefully, step by step. This article appeared several months ago in *MOTOR AGE*.

On your Model A Ford, I am inclined to believe that here, again, your trouble is centralization and, unless you have a special jig for checking it, it will be necessary for you to cut a port in the edge of one of your drums so that you can check lining to the drum clearance. As you know, the shoes are centralized by bending the support arms which are located behind the operating wedge.

If the trouble continues after proper shoe centralization, I would make sure that the spring U-bolts are tight and also that the shackles are in good condition. Worn king pins will also result in chatter. Quite possibly on this Model A you have a combination of troubles but taken altogether, result in chatter. I'd suggest that you go after one thing at a time, as I have outlined, until you have overcome the trouble.

## TRUCKIN'

I am having trouble with the drive shaft and universal joint on a 1935 Chevrolet, 1½ ton truck. The bell housing gets so hot that you cannot touch it with your hand after it has been driven about two miles. I have installed a new front drive shaft and drive shaft housing, universal joint, bell housing and speedometer gear housing.



I have taken this job down several times and checked for misalignment. I also installed second drive shaft and bearing and each time universals and torque tube were packed with grease.

The bushing in the front end of the drive shaft housing will be worn to need replacing in about 500 miles and this should be renewed now as it is very loose. I also installed a new bear-

ing on the rear of the transmission main shaft.

This truck is 157 in. wheelbase. The rear universal is O.K. Also, I have checked these parts mentioned above when the truck is loaded, thinking that the drive shaft might be too long—but that was O.K.

The drive shaft makes considerable noise after about 200 to 300 miles of driving after new parts were installed. The rear housings, wheels and springs were thoroughly checked for misalignment and found all right. A. S. Arnold, Arnold's Garage, Kipton, Ohio.

THE trouble you are experiencing on your 1935 Chevrolet 1½ ton truck can be overcome by the installation of a shim or spacer between the cross member and the propeller shaft housing. This spacer is designed to provide a support for the propeller shaft and maintain its proper alignment.

It is my belief that someone when working on this car neglected to install this spacer which has resulted in misalignment. A new spacer can be secured from any Chevrolet dealer and its installation will overcome your trouble.





### HE'S PREPARED—ARE YOU?

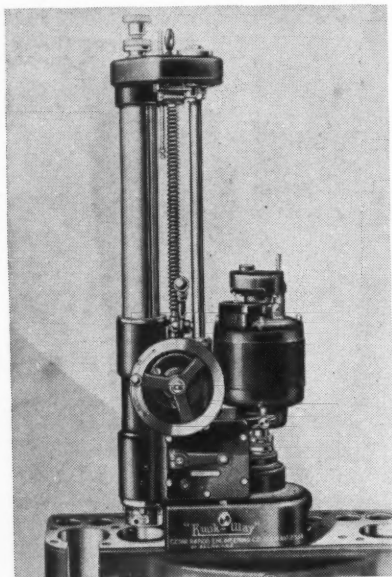
The little kid on skates has taken every precaution. You want to be just as careful that you don't miss any of the profit makers that are described on the following pages.

Many of these products will be on exhibition at the Automotive Service Industries Show. Prepare yourself for greater profits by taking advantage of these - - -

# NEW PRODUCTS

## Kwik-Way Boring Machine

One of the latest products of the Cedar Rapids Engineering Co., 902 17th St., N.E., Cedar Rapids, Iowa, is their models F and FS cylinder boring machine. It is quickly attached



to the cylinder block and employs three centering fingers to center the boring bar in the cylinder. It is powered with a 1/3 horsepower motor and contains two speeds for heavy or light cutting. Its construction is such that the boring mechanism may be stopped at any position, the bar raised and the size of the hole being bored may be verified with a micrometer. The model F has a range from 2 11/16 inches to 5 9/32 inches, with a stroke of 12 1/2 inches. The model FS has a range from 2.2 inches to 4 1/2 inches with a stroke of 12 inches and is powered with a 1/4 horsepower motor.

## New Guild Generator Assortment

The Guild Manufacturing Company, 710 N. Stricker St., Baltimore, Md., is presenting a new assortment of



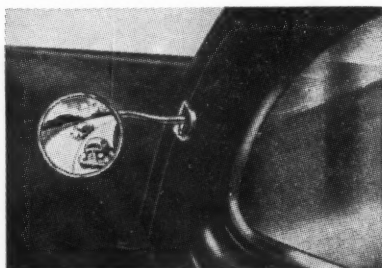
generators with a special display rack. This Guild assortment enables dealers to display quality generators to their best advantage.

## Conversion Equipment for Ford Motors

The Alexander Automotive Engineering Co., 345 West Manchester Ave., Inglewood, Calif., manufactures complete equipment for converting Ford 4-cylinder and Ford V-8 engines into engines suitable for racing car or motorboat installations. The conversion material is supplied in various groups ranging from a single high compression cylinder head to complete over-head valve heads with over-head camshafts, special manifolds, two Winfield carburetors, pistons, rings, bearings and a large capacity oil pump. With the complete equipment on the V-8 Models, the engines are said to develop 172 hp. at 5500 r.p.m. For complete information and prices, write the manufacturer.

## Rear View Mirror

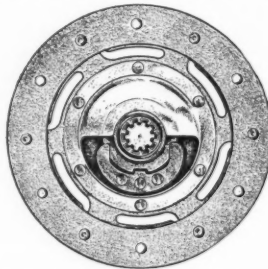
One of the latest products of the American Automatic Devices Co., Harrison, Throop and Congress Sts., Chicago, Ill., is their rear view mirror known as Safe-T-Vue. Several exclusive features are claimed for this mirror among them being an arm



that is adjustable forward and backward, over-sized flat mirror giving a broad range of vision, easily attachable to the door hinge pillar. It is made entirely of stainless steel, highly polished. A display stand is supplied with each unit package of 24 mirrors.

## Improved Cushioning In New Clutch Plate

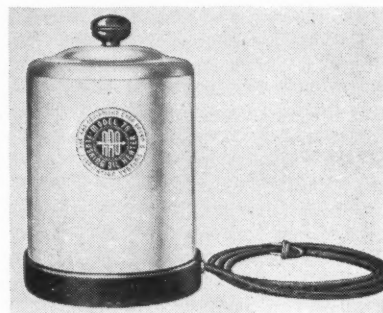
The Accurate Parts Manufacturing Co., 12435 Euclid Ave., Cleveland, Ohio, has introduced a new clutch plate known as their Z-type Powerflex



Clutch Plate. The new plate is said to incorporate a new design providing improved cushioning incorporating a new vibration dampener principle which completely eliminates motor and transmission vibrations from being transmitted to the car.

## Flushing Oil Heater

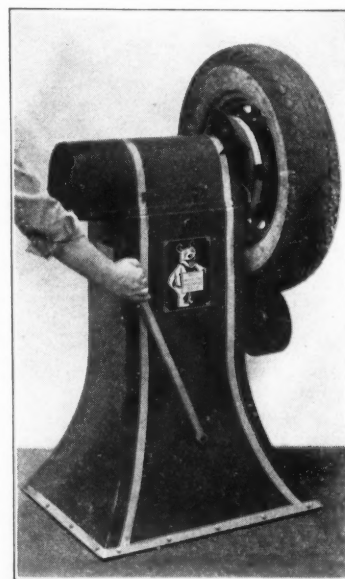
Flushing oil may be heated quickly and conveniently with the new electrically operated and thermostatically controlled flushing oil heater recently announced by the Aro Equipment Corp., Bryan, Ohio. The container has a capacity of 6 1/2 quarts and is



operated from the regular light socket by an 8-ft. heavy duty cord and plug. This unit is not a gear flusher but is intended to be used in connection with a flusher by supplying hot oil which greatly speeds up the operation of flushing differentials and transmissions.

## Bear Wheel Balancer Has "Neon Eye"

One of the products introduced by the Bear Manufacturing Co., 21st & 5th Ave., Rock Island, Ill. for the 1938 season is their new Wheel Balancer with a "Neon Eye." The wheel is placed on the balancer and rotated by an electric motor incorporated in the equipment. Then the motor is cut off and the "neon eye" switched on. As the wheel revolves, the "eye"

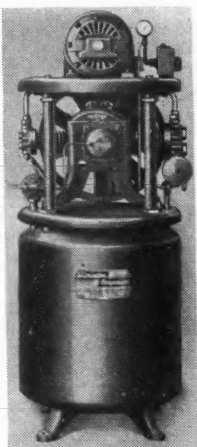


flashes its signal to indicate at what position the wheel is dynamically out of balance. This simplifies the process of determining where balance weights should be installed and greatly speeds up the operation of balancing wheels. For complete information and prices, write the manufacturer.



## New Wilmington Compressor

A new compressor has recently been announced by the Auto Compressor Company, Wilmington, Ohio. It is the vertical type, two stage, and is intended especially for filling stations in which space is limited. Careful construction insures a properly balanced motor which is quiet in operation and intended for long life. It is fitted with a non-pulsating, automatic opening and closing check valve and with an automatic pressure switch, easily adjusted and reset. For complete information and prices write the manufacturer.



## Radiator Water Filter

The latest product of the Actus Products Corp., 262 E. Third St., Mount Vernon, N. Y., is their radiator water filter illustrated below. This filter is installed in the upper radiator hose and is designed to trap



all foreign matter in the water as it passes from the engine to the radiator. It can be removed for cleaning without disturbing the hose and presents a new method to contribute to cooling system cleaning. List price \$3.50.

## Christmas Display for Burgess Batteries

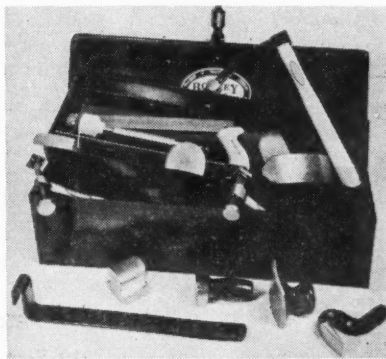
The Burgess Battery Company, Freeport, Ill., has developed a unique display for the Christmas season to assist in merchandising their complete line of flashlights. The display represents a Christmas tree equipped with the regular Christmas tree lights and backed up by a figure of Santa Claus. The display is 4 feet tall and 3 feet wide and is intended for either window, counter or floor display.

## Flash Vac-Stic Holds Vacuum Cups on Glass

Flash Laboratories, 1858 W. Kinzie Street, Chicago, Ill., manufacturing chemists, have developed a new product called Vac-Stic which is used to provide a secure fastening of vacuum cups to glass. The preparation is sold in 10c size bottles and is displayed on a counter display board holding 12 bottles. The display with contents carries a list price of \$1.20 with reductions in price for larger quantities. For complete information write the manufacturer.

## Bonney Tools

Exhibited for the first time at the A.S.I. Show in Chicago this month is the Bonney Forge & Tool Works new kit of body tools furnished in two



sizes. The one illustrated contains one each bumping hammer, light dinging hammer, fender bumper, fender bumper mallet, regular heel and general purpose dollys, fender bracket dolly, hand dollys—small and large—and three different body spoons. For full information and prices write the Bonney Forge & Tool Works, Allentown, Pa.



"Look here, sister, coils ain't got nothin' to do with poimanent waves!"

## Throttle Control In Gear Shift Lever

A throttle control mounted in the end of the gear shift lever in place of the regular ball, has been announced by the Ace Products Co., 629 Southard Ave., Toledo, Ohio. Easily installed, it provides control of the



throttle and leaves the right foot free to operate the brake pedal. Turning the ball regulates the flow of gas, and the ball stays in the position turned until turned back to the "off" position, thus permitting a fixed throttle position for long drives.

## AMCO Woven Lining

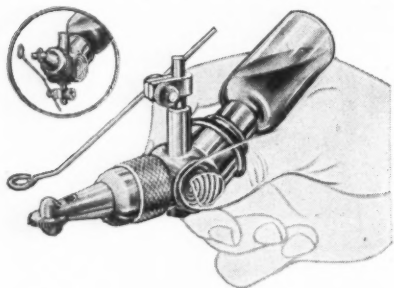
The newest product of the Asbestos Manufacturing Co., Huntington, Ind., is their AMCO Standard Woven lining. This is roll material designed especially for the older types of external brakes. It is reenforced with soft brass wire for maximum unit



strength. It is said to be remarkable for its long life, quietness and consistency of operation in wet and dry weather.

## Paint Striper Announced by Wendell

The Wendell Mfg. Co., 2535 North Ashland Avenue, Chicago, Ill., has announced a new master paint striper



for automotive use. It is constructed of high grade material and incorporates many advantages. Striping wheels may be obtained in sizes ranging from 1/64 in. to 3/16 in. The striper is designed to use any standard striping material such as lacquer or synthetic enamels, the paint being carried in a screw-top glass bottle which attaches to the striper. Any standard screw-type bottle can be used with this striper, which gives the added advantage of eliminating the necessity for cleaning the striper container when the color of the paint is changed. For complete information and prices write the manufacturer.

## Weaver Brake Tester

The Weaver Mfg. Co., Springfield, Ill., has recently announced a new combination brake and alignment tester of heavy construction, designed to handle any vehicle from the lightest passenger car to the largest truck or bus or tractor trailer combination.

This new equipment incorporates two important innovations. It can be used to accurately measure the brake energy of the ordinary passenger car or by merely turning a hand lever it is instantly converted into a heavy duty machine capable of measuring brake energy of heavy duty equipment. The second outstanding feature is an automatic recording mechanism which makes a permanent card record of brake action and wheel alignment as the vehicle is stopped on the tester. The test card is a graph which provides a means of intelligently analyzing the brake effort as well as the delayed action of any wheel and the equalization of all brakes.

The instrument may be secured either as simple brake tester or as a combination brake and alignment tester. It may also be purchased with or without the recording mechanism. The manufacturer will be glad to supply full details upon request.

## Durkee Atwood Catalog Available

Durkee Atwood Co., Minneapolis, Minn., has recently published a new catalog covering their complete line of frost shields, radiator covers and weather stripping, as well as other accessory products. Write for your copy.

## Claw Emergency Chain

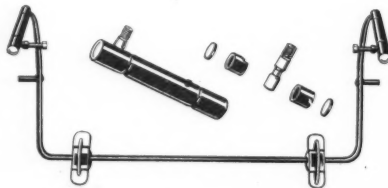
New improvements to the Claw emergency chains, a product of Columbus-McKinnon Chain Corp., Tonawanda, N. Y., are being offered for the 1938 season. Easily attached to the wheel without raising the car, Claw emergency chains are now fitted



with a patented cross link containing an extra wedge of alloy steel. They also have a new attaching hook which is supplied free with each set of six emergency chains. Write the manufacturer for information covering sizes and prices.

## Front End Stabilizer

The Monroe Auto Equipment Co., Monroe, Mich., has introduced a new stabilizer to be installed on 1935 to 1937 model Ford cars. The stabilizer consists of a solid bar of special, heat-treated spring steel, two connectors and two rubber mounting blocks. The



stabilizer is installed by attaching to the rear bolts of the front bumper bracket and by rubber mountings attached to the underside of the front axle U-bolts. The action of this bar is intended to offer resistance to side-sway and to maintain the front end of the car in a level position at all times. List price \$7.50.

## Johnson Bronze Catalog Off Press

The Johnson Bronze Co., 510 South Mill Street, New Castle, Pa., has recently issued a new catalog covering their complete line of bronze bushings and bronze-backed babbitt lined bearings. The catalog contains an alphabetical listing of car makes from approximately 1928 up through 1936 showing the application of Johnson bushings to the various parts of these models. Write for your copy of Catalog No. 36.

## Piston Rings Supplied in Sets

The A. B. Chance Co., Centralia, Mo., will announce at the A.S.I. Show two new piston ring combination sets—Nos. 120 and 120X which have recently been added to the Chance line of piston rings. The No. 120 compression ring is designed with a patented groove with oil holes on the top which serve to trap oil and allow the ring to move freely in the groove without a metal-to-metal contact in the ring lands. The scraper ring is designed for extreme flexibility to assist the compression ring in sealing the compression and to clean the cylinder



wall of excess oil. The inner ring which compensates for decreased wall pressure at low speeds is formed of high quality Swedish spring steel. Each ring is individually packed in a glassine bag and labeled for size and oversize.

## Trunk Lock Seal

The Champion Anti-Rattler Co., Inc., 1935 Washington Avenue, St. Louis, Mo., announces the No. 921 trunk lock seal for 1937 V-8 Fords. This seal attaches to the lower end of the trunk handle through the



center hole and stretches over the top of the handle effectively covering the lock to keep water and dirt from entering the lock mechanism. Twelve seals are mounted on an attractive display card and carry a list price of 15 cents each.

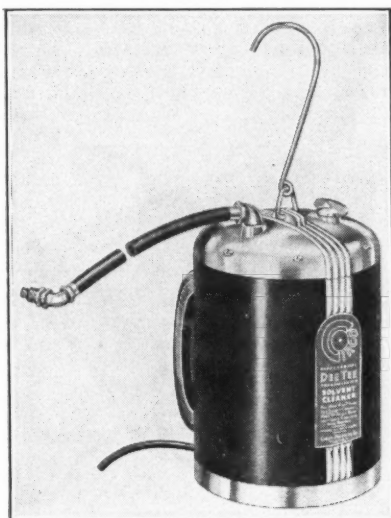
## ACP Driveway Cleaner

The latest product of the American Chemical Paint Co., Ambler, Pa., is their ACP driveway cleaner which is said to be a very effective and economical cleaner for service station and garage floors and driveways. It is packed in moisture-proof, multi-wall, plywood drums with handy lids which make it easy to remove the chemical without spilling it.



## Circo Vapor Cleaner

A new differential flusher known as the DEE-TEE solvent vapor cleaner has been announced by the Circo Products Co., 3088 W. 10th Street, Cleveland, Ohio. This cleaner is constructed so that it can be suspended from the axle of the car and operates from the regular electric outlet. The



electricity heats and vaporizes the "Dee Solv." The vapor circulating through and around the gears effectively washes off the old lubricant. The complete operation requires less than 15 min. and can be performed while the mechanic is doing other work.

## New Fulton Package Aids Xmas Sales

The Fulton Co., 1912 S. 82nd Ave., Milwaukee, Wis., has introduced a special package containing a matched set consisting of the Fulton gear shift ball and the Fulton Steernob. Both of these accessories are identical in



design and color and the method of packing them in sets in an attractive container is expected to prove a real aid in merchandising these products to the Christmas trade.

## Chase Dealer Upholstery Display

The L. C. Chase & Co., 295 Fifth Avenue, New York, N. Y., makers of velvet upholstery for automotive use has prepared attractive advertising displays for dealer use. These displays are especially designed for each car division and present the story of the upholstery with which the car is equipped.

MOTOR AGE, December, 1937



"My wife bought these horns for my car!"

## Portable Pliers for All Size Tire Chains

A newly designed portable Universal Plier for servicing all sizes of tire chains for passenger cars, trucks and buses, has been announced by the American Chain Division of the American Chain and Cable Co., Bridgeport,

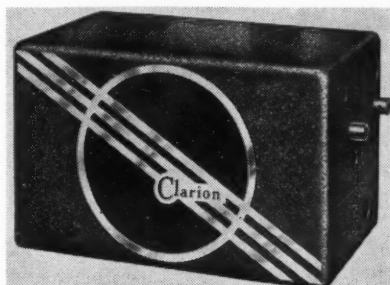


Connecticut, makers of "Weed Chains."

The pliers have two jaws, one of which is used to spread the links and the other to close them. List price—\$8.75.

## Clarion Radios

A new catalog issued by the Clarion Corp., Pure Oil Bldg., Chicago, Ill., illustrates their complete line of Clarion radios with custom made control panels to accommodate 1935, 1936 and 1937 model cars. The radios are supplied in three models—60, 70 and



80 and range in price from \$34.95 to \$69.95. They are supplied with an internal dynamic speaker, full automatic volume control, and are attractively finished. For detailed information and prices and for specific installations write the manufacturer.

## Tests All Anti- Freeze Solutions

A new freezemeter for testing all anti-freeze solutions has been announced by the Weatherhead Co., Cleveland, Ohio. The instrument is said to have many new advantages never before incorporated in a freezemeter. The extra heavy glass barrel is unusually large and contains a thermometer float and the necessary



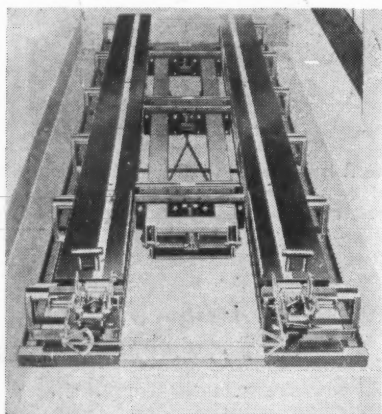
charts for calibrating the anti-freeze solutions at any temperature. The design is such that no liquid can reach the charts, while the thermometer is protected in a rubber well which prevents the float from striking the thermometer. The rubber tip is 14 in. long so as to readily withdraw the solution from the radiators of modern cars.

## New, Wiry Joe Cable

The Crescent Company, Providence, R. I., is exhibiting a new line of Wiry Joe Spooled Cable and Ignition Cable sets. This line is known as "Kopper-Kote" and is distinctively copper colored. A special treatment makes it impervious to oil and water and highly resistant to heat.

## Bee-Line Alignment Machine

A new wheel and chassis aligner with runways adjustable for tread widths has been announced by the Bee-Line Company, Davenport, Iowa. The runways are removable to provide easy access to the under side of the car and the turning aligners are built for heavy duty truck and bus service. It is equipped with a chassis brace which is easily adjusted to operate on any part of the car and is of ample strength to handle the heavy



duty truck or bus. Complete gage equipment is furnished to accurately check all parts of the chassis as well as steering geometry and front end alignment.

## C and Jay Reconditioning System

A system of upper cylinder reconditioning and crankcase reconditioning that is said to be insured by Lloyds of London against any injury to the user's motor, is being distributed throughout the country by the Craver and Jay Company, 21 West Tenth Street, Kansas City, Mo. The system consists of two products, the C and Jay Combustion Chamber Conditioner and the C and Jay Crankcase Conditioner. The treatment can be administered in about 15 minutes, and is said to entirely purge the areas of all sludge and foreign matter, leaving a fine film of specially prepared vegetable and petroleum lubricant on the



surfaces to protect valves and rings. Merchandising plans include an extensive advertising campaign, dealer helps and other business-building aids. For more complete information, write the Craver and Jay Co.

## Quick Check Electrical Analyzer

The latest product of the I-Tell-U Meter Co., 3216 Baring St., Philadelphia, Pa., is their electrical motor

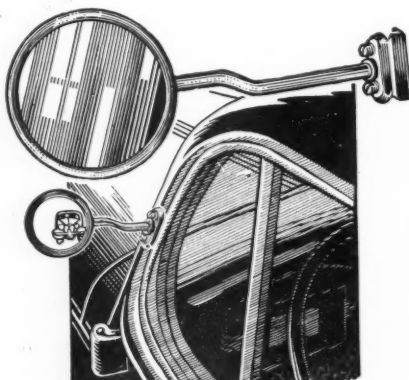


analyzer which is said to provide a means of making a quick check of the electrical circuits of the car except the starter current. This analyzer is made of aluminum castings and contains a triple range volt-meter and a double range ammeter.

Instructions with the instrument cover the use of the analyzer for checking the low tension circuit, the high tension circuit, coil, condenser, distributor points, spark plugs, ignition timing and the generator cutout. Instrument weighs 1½ lb. and carries a list price of \$12.

## Peer-Scope Mirror Is Theft-Proof

One of the latest products of the Blackstone Manufacturing Co., Inc., 1436 South Michigan Ave., Chicago, Ill., is their rear view mirror known as the Peer-Scope. This mirror at-



taches to the left front body hinge pillar in such a manner that when the door is closed the accessory is theft-proof. The mirror is adjustable to any angle to permit a clear view of cars approaching from the rear. List price, \$1.35 packed three in a carton.

## New Aluminum Manual

The Aluminum Company of America, Gulf Building, Pittsburgh, Pa., has recently issued a manual on the subject of "Machining Aluminum and Aluminum Alloys." This manual contains complete information on machine shop practice, the selection and sharpening of proper tool equipment and a table of accepted tolerances and comparative weights of standard screw-machine stock. Copies will be sent upon request.

## Loads Grease Gun

The messy process of loading hand grease guns is eliminated by the use of the Standix Gun Loader, a product of the Lubrication Corp., 910 South Michigan Avenue, Chicago, Ill. It consists of a gear-type pump located in a hollow tube and operated by a crank handle. The upper part of the tube is fitted with a threaded plug which fits into the standard 2-in. bung opening in the cover of 25, 50, 100, 200 and 400-lb. drums. It is claimed to pump a pound of chassis grease at room temperature in 30 to 40 seconds, and will handle any lubricant from light



chassis to heavy fibrous grease. It is furnished in two sizes, Model 210 recommended for drums up to 100-lb. capacity, and Model 240 for 200 and 400-lb. drums. A special cover can be supplied for pails or small drums that do not have the regular bung opening.

## Sterling Announces Cable Tester

The Sterling Cable Corp., 3529 24th St., Port Huron, Mich., has developed a new meter for testing battery cables. Designed to show the condition of the cable, the meter is graduated in DC millivolts to show the voltage drop between battery and cable. It is also marked in green, yellow and red areas indicating that the cable is good, fair

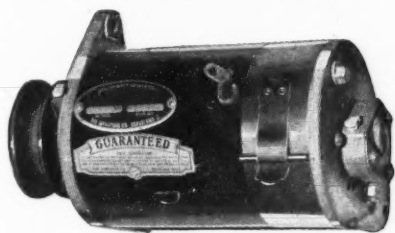


or bad. The new battery cable tester is offered free in a special deal with an assortment of Sterling-Nokrode battery cables. Also included is an attractive chromium and red display board for convenient merchandising of the cable assortment, and a Sterling flat rate chart that serves as a guide to full profit on both installation and cable. For complete details, write The Sterling Cable Corp.



## New Replacement Armatures Introduced

The Armature Co., 7500 Stanton Ave., Cleveland, Ohio, manufacturers of replacement armatures, has recently introduced a new line of Regular, Heavy-Duty, Super-Duty and Special Types of completely rebuilt Standard Generators. These generators are sold on an economical exchange basis, or



sold outright in those cases where the old generator is not available. Each generator has been thoroughly reconditioned at the factory and carries a 90-day guarantee. For complete information regarding list and exchange prices, write the manufacturer.

## Preservative Dressing

A new product known as F-77 Rubber and Leather Preservative Dressing is being introduced by the Vanderbilt-Osborne Corp., Raymond-Commerce Bldg., Newark, N. J. It is said to be made from an entirely new formula containing Carnauba Wax, and to nourish and preserve rubber or



leather through its protective treatment. It requires only 20 minutes to dry, and may be applied with a spray gun, brush, sponge or rag. Developed especially for treating automobile top, tires, running boards, floor mats and leather seats. It is supplied in Black and Clear.

## Binks Equipment Publishes New Catalog

The Binks Manufacturing Co., 3114 Carroll Ave., Chicago, Ill., has recently published a new catalog showing their complete line of Spray Painting and Refinishing Equipment. In addition to Spray Guns, Oil and Water Extractors, the catalog lists complete painting outfits as well as suitable compressors and pressure regulators for use with their equipment. Write for your copy.

MOTOR AGE, December, 1937



"He doesn't want that kind of a heater—he wants an open fire place!"

## Hall Brake Cylinder Hone

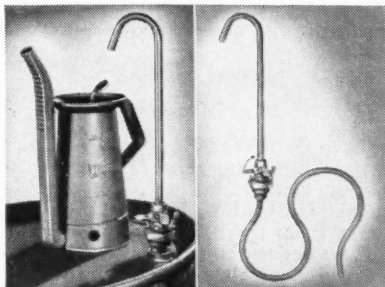
The Hall Mfg. Co., 1600 Woodland Ave., Toledo, Ohio, has introduced their new Model H cylinder hone which has been redesigned to provide a range of 2.6 in. to 4.6 in. without extension. This range increase permits servicing the Model 60 Ford with the same hone as used for larger cylinders and makes it unnecessary to invest in a special hone for that model.

Hall features including micrometer adjustment, fast cutting ability, wet or dry, and extreme accuracy have been retained in this newly redesigned Model H hone.



## Alcohol Dispenser

The Huffman Mfg. Co., Davis & Gilbert Aves., Dayton, Ohio, have recently introduced their new bulk alcohol dispenser. This dispenser features a cock valve faucet and push button valve type faucet for quick, easy control. The dispenser attaches to the



bung in the alcohol drum and is equipped with a long flexible tube reaching to the bottom of the drum. List Price —\$2.20.

## RIMAC Flexible Body File

Rinck-Mellwaine, Inc., 16 Hudson St., New York City, has announced a new improved file for body and fender work. It has a new form of reamer tooth which is said to cut smoother and stay sharp longer. Each side of the file blade has 146 curved teeth. The edges are razor sharp, and are followed by a wide groove to carry away chips. The file blade will fit all 14-in. body file holders. The company has also introduced a new blade holder



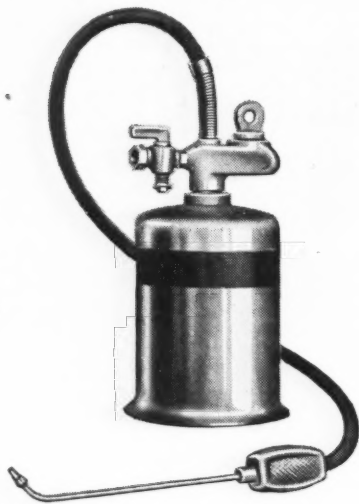
especially for the new flexible body file which is a solid hardwood handle, slightly curved, to afford positive balance and control. List price of the file blade, \$2.15; the holder, \$1.50.

## Defroster Liquid Eliminates Steam and Frost

A new liquid defroster for protecting the inside of all window and windshield glasses has recently been announced by Ogden Chemical Laboratories, 324 E. Third Street, Cincinnati, Ohio. This new product known as Kemsol Inside Defroster Liquid is said to clear the glasses and prevent the formation of mist, steam and frost under all conditions of temperature down to 60 degrees below zero. A small two-ounce bottle is said to be sufficient to last the average motorist the entire season. A sample and complete information will be sent upon request.

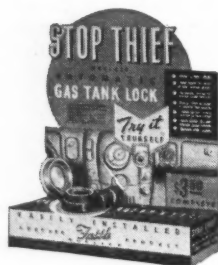
## Renson's Gear Flusher

A practical washer for hypoid gears, selling at the low price of \$7.70, has been announced by Renson Products



Co., Conshohocken, Pa. Operating from the air line, the washer holds two quarts of flushing oil, and the nozzle provides a fine, needle-like spray that directs the flushing oil to all parts of the gear assembly as well as washing the inside of the housing. A descriptive folder will be sent upon request.

## Gas Tank Cap Is Theft Proof



A new product of the Faith Mfg. Co., 5920 N. Pulaski Rd., Chicago, Ill., is their Stop-Thief gas tank cap which is theft-proof. The outfit consists of the cap itself and an electromagnet which is operated by a push button on the instrument panel and is connected to the coil. The cap is released by pushing this button, thereby making it impossible for the cap to be lost off or stolen.

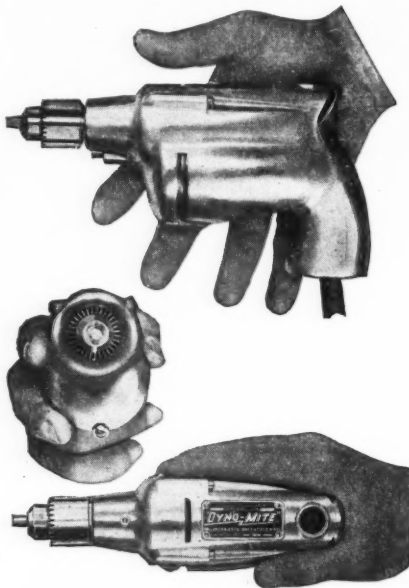
## New Electric Flares



A new 6-volt electric flare has been announced by the Do-Ray Lamp Company, 1458 S. Michigan Avenue, Chicago, Ill. The new flare is designed and constructed to provide a powerful red beam from any position. They are designed to operate with the regular 6-volt lantern battery and are of extremely sturdy construction. Each flare is provided with a flag holder socket welded to the frame and there is also available a clear lens so that the flare may be used as a trouble lamp.

## Small Electric Drill

The latest addition to the line of Millers Falls Tools, manufactured by the Millers Falls Co., Greenfield, Mass., is their new "Dyno-Mite", a ¼-in. electric drill. It weighs only 2½ lb., the overall length is 8 in., and the width of the body is 2½ in. Its size, combined with its streamline design, makes it unusually easy to hold in the hand. It is equipped with a uni-



versal motor operating on 110 or 220 volts, A C or D C current, up to 60 cycles. Identified as No. 400, the list price is \$32.

## McKay Multi-Grip Chain

An improvement in the McKay "Multi-Grip" bar-reinforced tire chain has recently been announced by the McKay Co., Pittsburgh, Pa. It is distinguished from other chains by a double bar reinforcement, each link having two bars or lugs. Its construction is said to provide extra traction and extra resistance to skidding as well as greater durability. The reinforced bars are case hardened and are so constructed that as they wear each bar retains a sharp, clean edge.



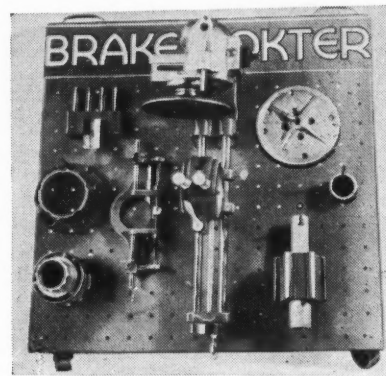
## Hydraulic Jacks

The Hein-Werner Motor Parts Corp., Waukesha, Wis., is offering for 1938 a complete line of newly designed hydraulic jacks. The line ranges from their Bullet Model priced at \$3.30 net to their Model 0324G jack mounted on rubber wheels and having a four-ton capacity and carrying a net price of \$50.50.

A catalog of this complete line of hydraulic jacks will be furnished upon request.

## Brake Dokter Display

The Stiles-Barrett Corp., 2741 Washington Blvd., St. Louis, Mo., is introducing for the first time a new display stand featuring their Brake



Dokter equipment. The stand is mounted on rollers and is built to accommodate either the regular or heavy duty Brake Dokter and the associated parts. This company is also introducing a new heavy duty Brake Dokter designed primarily for truck work.

## Hecker Gold Dust Cleaner

The Hecker Products Corp., 88 Lexington Ave., New York City, has announced the introduction of Gold Dust, all-purpose automotive cleaner. It is packed in 25- and 50-pound drums for easy handling and provides a compound for cleaning greasy parts, garage floors and driveways and lubrication departments. It can also be used for washrooms, windows, fix-



tures and other points in the service station which require regular cleaning. The 25-pound drum is priced at \$1.70 net, and the 50-pound drum, \$3.15 net.

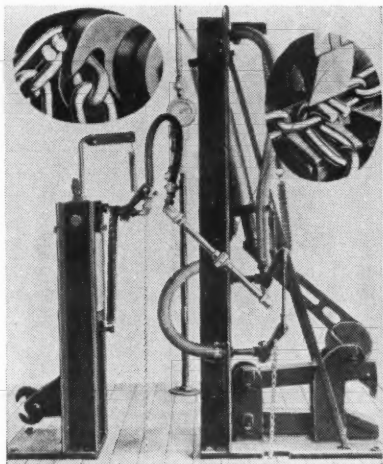
## Miller Selling Helps

The Miller Manufacturing Co., 1220 Kaighn Ave., Camden, N. J., makers of "Wonder Weld," has available for dealer use a complete line of advertising and selling helps along with envelope stuffers imprinted with the dealer's name.



## Repairs Tire Chains

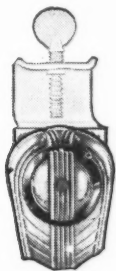
The Pyrene Manufacturing Co., Newark, N. J., has announced a new Pyrene Power-Driven Chain Repair Machine. It is operated from the air line on 100 pounds pressure and is controlled by a foot pedal. The machine is equipped with two jaws, one



of which spreads the links and the other closes them. The entire operation is performed quickly and the steady pressure applied eliminates the possibility of internal fractures in the links. It will handle any size cross chain hook either for passenger car or truck service.

## Heavy Duty Heater Switch

The Henry Coyle-F. C. Hersee Co., 54 Old Colony Ave., Boston, Mass., has announced a new line of heavy duty heater switches. These switches



are equipped with plastic face plates of modernistic design and harmonious colors with Tenite translucent knobs to match the face plate. The knobs illuminate when the switch is on.

## Victor Gasket Catalog Originates New Style

The Victor Mfg. & Gasket Co., 5750 Roosevelt Rd., Chicago, Ill., has issued a new catalog of their products. The new catalog originates a new style of showing the grease retainers for different models and years of cars. This new style enables the buyer to name, at a glance, the desired items for front wheel, rear axle and pinion. It also greatly simplifies the operation of locating the particular part desired.

Copies of this new catalog will be supplied upon request specifying retainer List No. 27.

MOTOR AGE, December, 1937



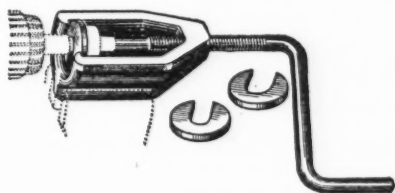
"Miss La Verne wants a stop light for the back seat."

## Tobin-Arp Bearing Line Borer

The latest product of the Tobin-Arp Manufacturing Co., makers of motor rebuilding equipment, 915 Washington Avenue, Minneapolis, Minn., is a Main Bearing Line Boring Machine known as their Model TA-14. The machine is a complete unit upon which any cylinder block or crankcase may be quickly placed, lined-up and fastened in position for line boring the main and cam shaft bearings. It uses a short hardened boring bar supported by heavy rigid bearing arms which assures perfect alignment. Model TA-14 is powered with an electric motor and equipped with a hydraulic feed producing finished bearings that are glass smooth.

## New Puller Announced By Capco

The Capitol Automotive Parts Co., 1801 14th Street, Elkhart, Ind., has announced a new puller designed especially for pulling generator and starting bearings and gears. The puller body is made of a semi-steel casting fitted with an alloy steel crank screw and supplied with three assorted sizes of hardened steel horse-shoe thrust



washers. It can be used by clamping in vise or may be held in the hand for an unusual job and will accommodate gears up to 2 1/2 in. in diameter and will operate on shafts up to 4 1/2 in. long. The puller weighs 5 lb. and carries a net price of \$3.50.

## Goodrich Presents New Battery

The B. F. Goodrich Co., Akron, Ohio, has introduced their new K-series batteries known as the "Kathanode Electro-Pak." These batteries employ the well-known Kathanode



principle of construction and in addition have a special power-saving top cover. The K-series is supplied in sizes ranging from 45 to 63 plates and are covered by the Kathanode guarantee—"As long as you own the car."

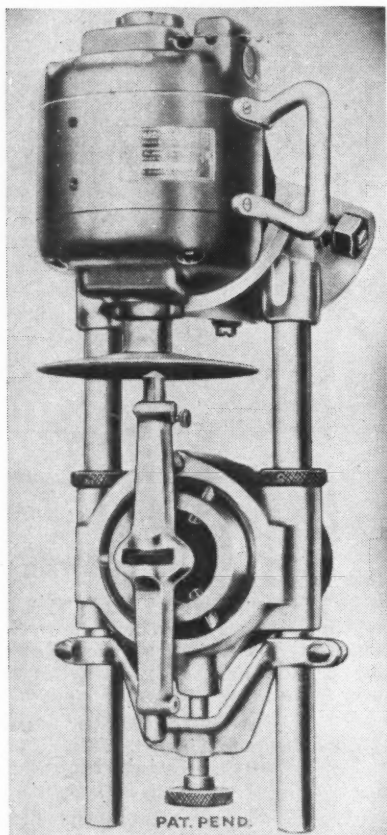
## Wheel Changeover Set

The Budd Wheel Co., Philadelphia, Pa., and Detroit, Mich., has announced changeover equipment whereby 1/2-ton trucks can be changed to accommodate heavy duty tire equipment. A new concave disk wheel designed and built for use with 7.50-16 and 7.50-16 extra ply tires has been developed for this purpose. It is supplied with adapters where necessary to fit original equipment hubs and greatly increases the service range of the truck.

This changeover equipment opens up a large field and promotes a new market for heavy duty tires.

## New Brake Shoe Grinder

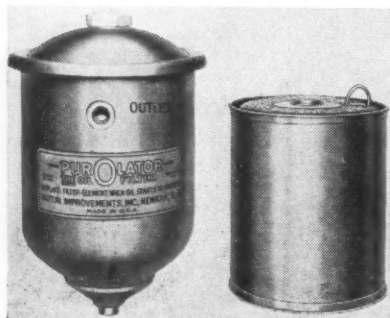
The latest product of the Shepard-Thomason Company, 2023 West Gage Ave., Los Angeles, Calif., is their Model 50 Brake Shoe Grinder. This machine is designed to grind brake



shoe linings with the shoes in place on the car. By this method the lining is ground with precision accuracy and concentric with the axle which assures a most satisfactory job.

## New Purolator for Special Jobs

Motor Improvements, Inc., 365 Frelinghuysen Avenue, Newark, N. J., have announced a new model N-15 Purolator with a replaceable filtering element. This new product was designed especially for Plymouth,



Dodge and DeSoto cars whose owners request a replaceable element type Purolator to replace the cartridge type with which these cars were originally equipped.

## Bean Air Hammer

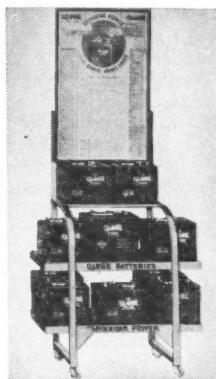
The Bean Mfg. Co., Lansing Mich., has recently announced a new air hammer, particularly adaptable to automobile service work. It operates from the air line, having 90 pounds or more pressure, and delivers approximately



2500 blows per minute. The hammer weighs 4½ pounds and is sturdily constructed of material selected for its adaptability and can be used with any of the dollies employed in metal bumping work. List price \$29.50.

## New Battery Display by Globe-Union

Globe-Union, Inc., 900 E. Keefe Avenue, Milwaukee, Wis., has developed a new battery display along



modern lines. It is being supplied in connection with a special introductory offer along with new merchandising aids. For complete information about this new deal consult your nearest Globe-Union dealer or write direct to Globe-Union, Inc., at the above address.

## Niedorp Offers Complete Line of Radio Aerials

The J. G. Niedorp Equipment Co., 300-312 Locust Street, St. Joseph, Mo., has recently announced a complete line of radio aerials of the extension type. They are supplied in styles for hinge mounting or for bumper mounting and are said to be highly efficient in reception and in the elimination of wheel and car static. For complete information and prices write the manufacturer.

## Nacto Cleaner

Recent improvements in Nacto Fabric Cleaner have adapted its use to the removal of oil and grease spots, tar, paint and even chewing gum from the car upholstery. Nacto is known as the penetrating spot remover since it is claimed that it not only cleans the surface but penetrates through the fiber of the upholstery and does a



thorough cleaning job. It is claimed to be non-injurious to fabrics and fast colors and it is also a germ-killer and moth preventive. It is supplied in containers ranging from a 4-ounce bottle to a 50-gallon drum. Maker—Nacto Cleaner Corp., 2171 Madison Avenue, New York.

## Midland Has Power Brake Equipment

The Midland Steel Products Co., Madison Avenue and West 106th Street, Cleveland, Ohio, is in a position to supply vacuum power brake equipment in connection with their



regular line of Midland brakes. A complete catalog on this subject has recently been issued and will be sent upon request.

## Modern Tire Gage

The G-M-Co. Mfg. Co., Inc., Long Island City, N. Y., has recently announced a new tire gage. It is a precision instrument sturdily constructed and easy to read. Each gage is supplied

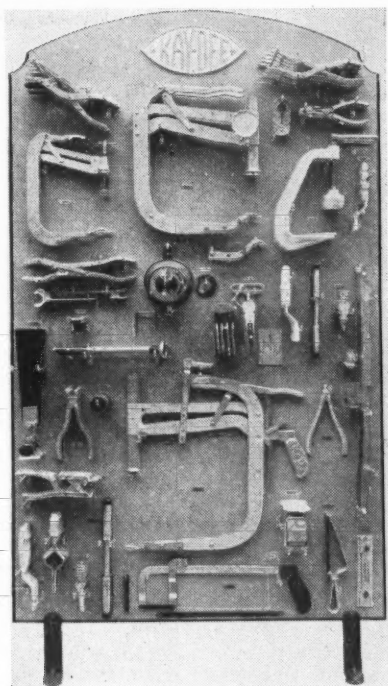


complete with deflating pin and pencil clip and is individually boxed 10 to a carton. It is supplied in two sizes—No. 20 which registers up to 120 lb. and No. 25 which registers up to 50 lb. The list price is \$1.25.



## K-D Announces New Tool Display

The K-D Manufacturing Co., Lancaster, Pa., is displaying at the A.S.I. Show in Chicago a new display board featuring their line of special tool equipment. The board is equipped with extra long steel hooks on which several items of a kind may be car-



ried and the outline of each tool is stenciled on the board. This permits stocking more than one item of each tool and provides a visible inventory for the jobber.

The display board is 36 in. by 60 in. and is attractively finished in orange color lacquer with bright brass plates indicating the type number of each tool.

## New Gear Shift Ball by Sinko

The Sinko Tool & Manufacturing Co., 351 N. Crawford Ave., Chicago, Ill., has announced a new Gear Shift Ball known as "Bez-L-Ball." It is constructed of non-inflammable, unbreakable material and in colors to harmonize with interior motor car fittings. The new ball has an onyx finish and is supplied in either oval or fluted types.



## Du Pont "Zerone" Kit

A new kit of advertising and merchandising aids has been announced by E. I. du Pont de Nemours & Co., Wilmington, Del., covering their "Zerone" Anti-Freeze. The kit consists of large cloth banners, counter displays, window posters and other sales helps of a like nature.

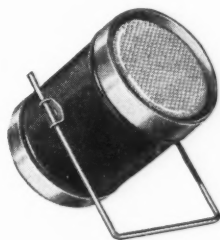
MOTOR AGE, December, 1937



"All right, Mr. Haypuss, have it your own way—it's a buggy whip!"

## Bolser Electric Highway Flare

The Bolser Corporation, S. W. 9th and Murphy Streets, Des Moines, Iowa, has announced several models of highway flares, among them being



their Electric Flare, Model No. 43, illustrated. This instrument uses a standard lantern battery and a No. 55 Mazda bulb and is equipped with an adjustable handle which also serves as a mounting stand. The Flare is provided with a reflector in the bottom for emergency use. List price—\$1.25.

## Worthington Compressors for Garage Use

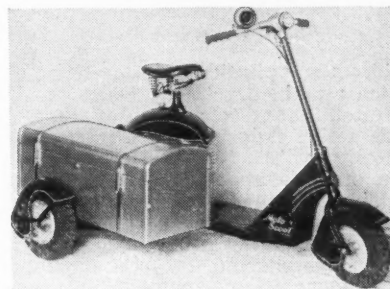
The Worthington Pump and Machinery Corp., Harrison, N. J., is offering a complete line of single and two-stage air compressors for automotive use. They are supplied in either the horizontal or vertical type of compressors and in sizes to fit individual requirements. For complete information and prices write the manufacturer.

## Tropic-Aire Heater Catalog

A new catalog illustrating and describing their new line of heaters and defrosters has recently been issued by Tropic-Aire, Inc., 60 11th Avenue, N.E., Minneapolis, Minn.

## Moto-Scoot For Delivery Service

The Moto-Scoot Manufacturing Co., 215 South Western Avenue, Chicago, Ill., makers of Moto-Scoot vehicles have announced several new features.



Among them are a headlight mounted in the handle bars, new streamlined covering for the motor housing and a special model along the lines of the motorcycle side car. The side car in this case is a spacious trunk which makes the arrangement ideal for quick delivery service by jobbers and repair shops.

## Solders Stainless Steel

The Ruby Chemical Co., 68-70 McDowell Street, Columbus, Ohio, has developed a new soldering flux for use with stainless steel. This new flux needs no special equipment or special solder, works freely at a relatively low temperature, thereby eliminating discoloration. The flux is supplied in pint, quart and gallon containers, priced at \$1.25 per pint, \$2 per quart and \$6 per gallon.

## Raymond Catalog Available

New catalogs and descriptive literature have recently been published by the Raymond Manufacturing Co., Corry, Pa., covering their complete line of valve springs, brake springs, valve stem keys, expansion plugs and other special spring products.

## Van Cleef Announces New Fluids

Van Cleef Bros., Woodlawn Avenue, Chicago, Ill., manufacturers of Dutch brand rubber and chemical products, have recently announced a new hydraulic brake fluid known as Dutch Brand PC 2 and also Dutch Brand shock absorber and knee action fluid. Both of these products are being exhibited at the A.S.I. Show in Chicago.

The new brake fluid is said to be not only physically and chemically stable, but will work with equal efficiency in passenger cars and commercial vehicles. Extreme changes in weather are said not to affect this



fluid, the physical properties of which remain practically constant.

Dutch Brand shock absorber and knee action fluid is said to mix satisfactorily with other fluids used for this purpose and is not affected by temperature changes. The brake fluid and the shock absorber fluid are put up in cans having a new non-spilling, easy-pouring spout for economy and convenience. For complete information and prices, write the manufacturer.

## Eis Has New Brake Cylinder Hone

The Eis Mfg. Co., Inc., 1365 Jerome Avenue, New York City, has recently announced a new brake cylinder hone. Its main feature is the adjustable tension of the stones from the lightest finishing tension to the hardest rough-



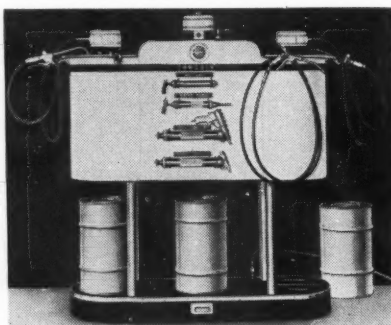
ing tension with a slight twist of the adjusting knob. Another desirable feature is one which permits the stones to contract thus preventing scratching the cylinder walls when the hone is removed.

### Ray-O-Vac Merchandising Aids

The Ray-O-Vac Company, Madison, Wis., has announced a new series of merchandising aids and dealer selling helps covering their complete line of flashlight, flare light and radio batteries.

## ARO Announces New Lubricators

The Aro Equipment Corporation, Bryan, Ohio, has announced a new line of portable and stationary lubricators incorporating one "Duplex" and two (or three) Simplex Lubricators to be known as "Multiplex" Lubricators. To facilitate changing



grease drums in this new unit a four-post lift has been incorporated in the cabinet so that the cabinet can be raised by air pressure while the grease drum is being changed. Special hand gun sets for specialized lubrication are offered as optional equipment and when so ordered are mounted on the center panel of the "Multiplex" cabinet.

## Watervliet High Speed Pneumatic Hammer

The latest product of the Watervliet Tool Co., Inc., Albany, N. Y., is their new pneumatic hammer with foot throttle control.

The hammer may be adjusted to strike a light or a heavy blow by an adjusting screw located in the head. It is built of sturdy construction and although it weighs only 7½ lb. it is extremely rigid. The foot control, an exclusive Watervliet feature, provides greater ease of operation for the mechanic and also makes it possible to use the hammer under conditions which heretofore required different treatment. For complete information and prices, write the manufacturer.

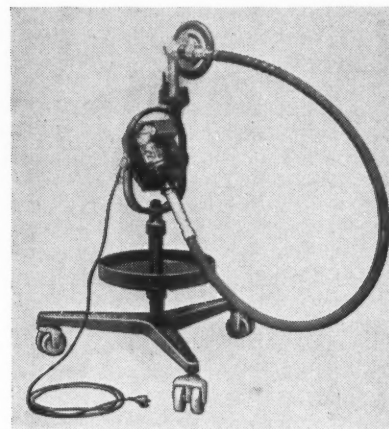
## New Products by Vel-Vac

A new bulletin recently issued by the Vacuum Power Equipment Co., 1644 W. Lafayette Blvd., Detroit, Mich., lists a new vacuum reserve tank which conforms to I.C.C. Regulations for equipment on commercial trailers or trucks used in interstate commerce. The reserve tank is 8 in. x 22 in. and has a capacity of 1100 cu. in. It is supplied with mounting brackets welded to the body of the tank.

Another new product is a trailer hose coupling which is interchangeable with any other standard type of hose coupling which makes it practical for fleets to use one or the other in conjunction with what they have. They are supplied in ½ in. and ¾ in. sizes.

## Flexible Shaft Grinder Announced by Mall

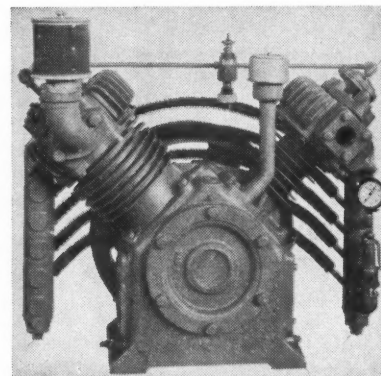
The Mall Tool Co., 7740 South Chicago Avenue, Chicago, Ill., has announced a new flexible shaft grinder known as the Mall Power-Flex Hi-Boy. The flexible shaft is provided with a coupling to facilitate changing instruments so that the machine may be used for either grinding or polishing. The Power-Flex Hi-Boy is



mounted on rollers so that it can be easily moved around the car and the flexible shaft provides ready access to all parts of the car for grinding or polishing operations. It will be found to be especially useful to body and fender repair shops. For complete information and prices write the manufacturer.

## Gardner-Denver Air Compressor

The Gardner-Denver Co., Quincy, Ill., has recently issued a new catalog featuring their new line of air cooled air compressors. Outstanding in the line is the new Model ADR compressor which is a vertical, two-stage V-type with single acting air cooled cylinders. The crankshaft is made of drop forged alloy steel and is supported by two Timken tapered roller

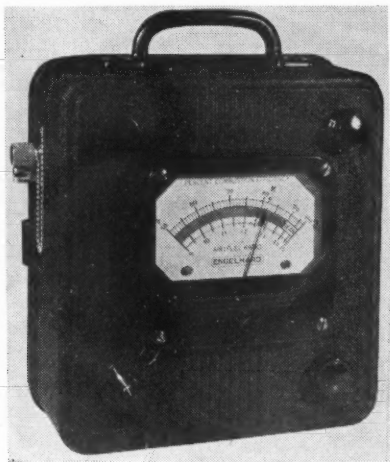


bearings. Lubrication is by splash to all moving parts and crank pin bearings are steel backed, babbitt lined removable type. An intercooler of copper tubes and fins is located directly in the air blast from the fan.



## Exhaust Gas Analyzer

Charles Engelhard, Inc., 90 Chestnut St., Newark, N. J., has recently announced an Exhaust Gas Analyzer known as the "Exhaustalyser." This instrument was developed for portable work and is said to be a completely new design and is self-contained. It is sufficiently small to be mounted on the door window of the

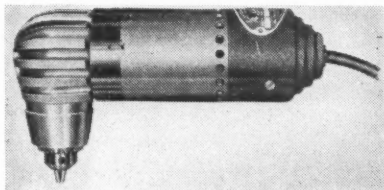


car by means of hooks so that tests can be made by the driver under actual road conditions. A new feature of this type of analyzer is the fact that the cell blocks are replaceable thus eliminating the necessity of returning the instrument to the factory for replacement.

## New "Shorty"

### Electric Drill

One of the latest products of the Black & Decker Manufacturing Co., Towson, Md., is their new "Shorty" electric drill produced in 3/16 in. and 1/4 in. sizes. The chuck spindle is mounted at right angles to the motor which reduces the overall working length of the tool to 4 1/2 in. The drill fits snugly in the operator's hand and



requires no extra handle. It is equipped throughout with ball bearings and has a universal motor which operates on either AC or DC current. Thumb control switch is in the line just back of the tool. "Shorty" weighs 3 1/2 lb. and carries a list price of \$35 in the 1/4 in. size and \$38 in the 3/16 in. size.

## New Yost Catalog

The Yost Manufacturing Co., Meadville, Pa., has recently published a new catalog covering their complete line of bench vises. The line includes machinists' pipe and double swivel vises for practically every purpose.

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## New Arrow Fog Lamp

The Arrow Safety Device Co., Medford, N. J., has announced an improved Arrow Driving Lamp which has met the specifications of the various states in which Fog Light ap-



proval is mandatory. It has a new Convex Lens which is designed to capture all fringe rays and so concentrate them that the result is a powerful driving light in a horizontal maximum illumination without glare.

## New DeVilbiss

### Spray Catalog

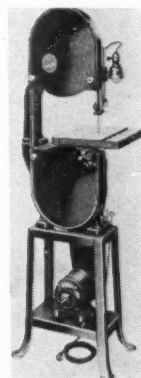
A new catalog has recently been released by the DeVilbiss Co., Toledo, Ohio, covering their complete line of spray painting equipment. This catalog contains not only a list of the products, but a description of each one sufficient to make the catalog a valuable selling tool.

## New Atlas Lathe

The Atlas Press Co., Kalamazoo, Mich., has recently announced a small metal lathe for the small shop. It is available in two sizes and will accommodate stock up to 6 in. in diameter. One model has a distance of 12 in. between working centers and the other model has 18 in. between centers. It is a V-belt drive, spindles are mounted on tapered roller bearings and it has a range of 16 speeds.

## Metal-Cutting Band Saw

Designed for a wide range of cutting operations, a new metal-cutting band saw has recently been announced by the Delta Mfg. Co. of Milwaukee, Wis. The saw has five speeds to



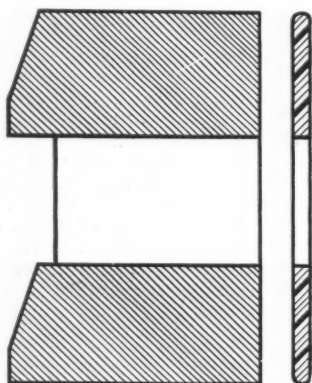
accommodate its use to different metals and a high speed for woodwork. The band saw has a capacity of 14 in. and will cut materials up to 6 in. thick. All bearing parts are fitted with New Departure self-sealed bearings which eliminate the necessity of lubrication.

## Vedoe-Peterson Catalog

The Vedoe-Peterson Co., Norfolk Downs, Mass., has issued a new catalog covering their "Nu-Angle" line of special reamers.

## American Hammered Has New Piston Ring

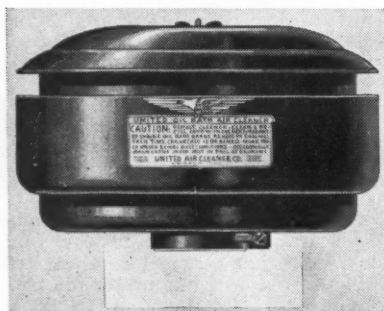
Following extensive experimental work and testing, American Hammered Piston Ring, Div. of Koppers Co., Baltimore, Md., is announcing at the A.S.I. Show in Chicago its new Oil Cutter piston ring. Oil Cutter takes its name from its ability to cut down oil cost. The new oil cutter ring, a cross-section of which is illustrated, is an improved wide channeled type, having twin tapered faces and used in the oil grooves of the piston in both the conventional and flexible set-ups. The design of the ring is such that on the up stroke of the piston the twin tapers sled over the oil film, effectively preventing it from being scraped upward into the combustion chamber. On the down stroke, the tapers act as twin cutting edges, scraping the oil down the cylinder wall. Any surplus oil, passed by the bottom cutting edge, is picked up by the top cutting edge and returned to the crankcase through the oil drainage slot. Due to the twin bevels the



Oil Cutter ring provides extremely high unit pressure which causes the ring to seat almost instantly, which reduces cylinder drag and increases the life of the ring.

## New Oil Bath Air Cleaner

The United Air Cleaner Co., 9705 Cottage Grove Ave., Chicago, Ill., has announced a new oil bath air cleaner for 1938. It is similar in appearance to the 1937 model, but is 9 in. instead of 9½ in. An outstanding feature is



that the new cleaner has approximately the same range of oil action as the larger cleaner, without restricting the air flow capacity. It will be found as standard equipment on several 1938 cars and trucks, particularly in the dust area.

## Kem Ignition Parts

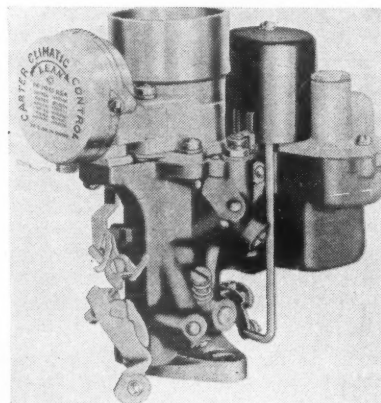
A quality line of ignition parts is manufactured by the Kem Mfg. Co., Inc., 601 West 26th St., New York City. Special care in the manufacture and assembly of Kem parts insures lasting, trouble-free performance. Coils are said to deliver a starting spark on 3 volts battery, and to be capable of a maximum capacity of 28,000 volts. Contact points are of



high grade Tungsten, springs are individually tested and "set," breaker blocks are made of hard bone fibre with extra-long wearing qualities. Condensers have uniform insulation with positive soldered connections, and are vacuum packed to keep out moisture and oil fumes.

## Carter Adds Vacuum Metering Rod

A new feature of the Carter Carburetor models W1 and WDO dual, is the vacuum controlled metering rod. In previous models the metering rod was fixed to the accelerating device. In the new vacumeter carburetor the



metering rod is free and is actuated by manifold vacuum against spring tension. The chief advantage of this type of construction is that a compensating richer mixture is supplied when momentary loads are placed on the engine. In other words, at a fixed throttle speed on level road, there is very little pull on the motor; suddenly a load is placed on the motor which decreases the vacuum, allowing the spring tension on the metering rod to lift the rod, thereby supplying a richer mixture. As soon as the load on the motor is dissipated, the vacuum pulls the rod into its former position again supplying the economy mixture.

## Rebuilt AC Fuel Pumps

The AC Spark Plug Company has recently announced a fuel pump rebuilding service that has been established in 21 cities throughout the country. The plan enables the car owner to immediately secure a rebuilt fuel pump in exchange for the one he has which needs repairing, at a cost no more than for actually repairing his pump, and at a considerable saving of time. Fuel pump rebuilding plants have been set up in Atlanta, Boston, Buffalo, Chicago, Cincinnati, Dallas, Denver, Detroit, Indianapolis, Kansas



City, Los Angeles, Minneapolis, New Orleans, New York, Omaha, Philadelphia, Pittsburgh, San Francisco, Seattle and St. Louis.

## Special Wrench For Starter Bolts

The Plomb Tool Co., 2209 Santa Fe Avenue, Los Angeles, Cal., has developed a special wrench for removing those hard-to-reach cap



screws on late Chrysler-built cars. Gets through all obstructions and slips easily over the difficult top inside bolt head. Nothing need be removed to reach the bolts. Has 5/8 in. 12-point opening. Catalog No. 6601. List price, \$1.25.

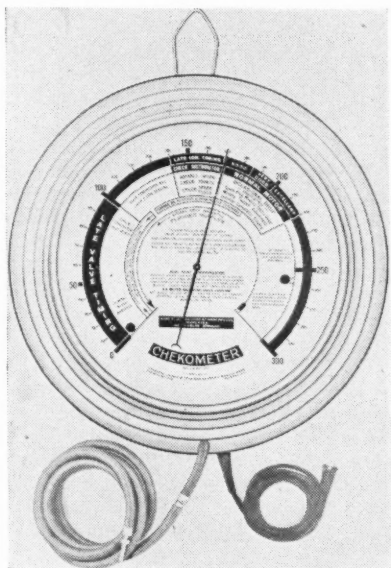
## Ethyl Corp. Q. and A. Book

The Ethyl Gasoline Corp., 405 Lexington Ave., New York, N. Y., have recently issued an interesting book called "The Automobile Question and Answer Book." It presents a unique discussion of the operation of the gasoline engine and explains in non-technical language the effects of different operating conditions and fuels. Copies will be sent upon request.



## New Instrument Makes Complete Motor Check

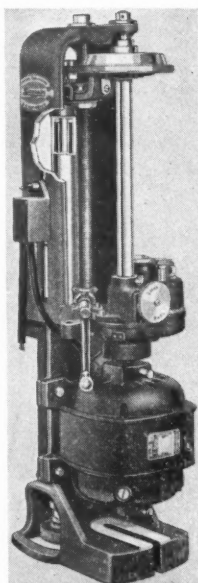
A new instrument developed by Universal Chemists, 263 Northampton St., Boston, Mass., is being announced at this time. It is the Chekometer, and is said to provide a quick



check of the internal condition and operation of the engine, and is easy to operate. It works on the vacuum principle, but employs a new type of movement. The dial is 17½ in. in diameter and is acid etched in color. The case is finished in chromium. A complete instruction chart, 4 ft. by 3 ft., is furnished with each Chekometer. Dealer's net price, \$57.50.

## New Simplicity Reborer and Grinder

The latest product of the Simplicity Mfg. Co., Port Washington, Wis., is their new "Lightning" reborer and grinder. The new machine will handle cylinders from 2.2 in. to 4.5 in. in diameter, and 11 in. deep. It has two speeds, the boring bar feed and an emery wheel speed of 5500 r.p.m. An automatic feed mechanism provides a uniform bar feed and an automatic switch control shuts off the machine when the operation is completed. The grinding spindle and the transmission are mounted on ball bearings and completely sealed with lubricant.



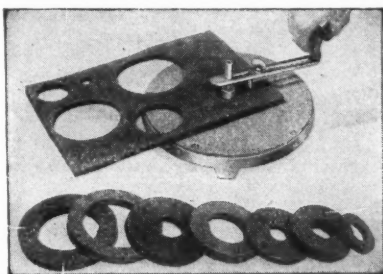
The grinding spindle and the transmission are mounted on ball bearings and completely sealed with lubricant.



"Gee! Have you got a fever!"

## Cut Your Own Gaskets

To make it easy for the repair shop to cut its own felt, cork or rubber gaskets, the Felt Products Mfg. Co., 1504 Carroll Ave., Chicago, Ill., has developed a cutting machine that will quickly and cleanly cut gaskets up



to 8 in. in diameter. Inside diameters as small as ¼ in. may be cut on this machine. With this cutter it is unnecessary to carry a large stock of felt washers, gaskets, etc. Price \$8.00.

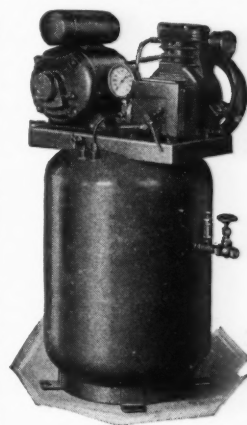
## New Do-Ray Foglite

A new double purpose foglite, which serves not only as a standard foglite but also as a reflecting device when the lights are turned off, is announced by the Do-Ray Lamp Company, 1458 S. Michigan Ave., Chicago, Ill.

The new Do-Ray light provides the added protection of eliminating driving hazards when headlights may be burned out or accidentally turned off. The reflector qualities of the special Tiger-Ey lens indicate to the drivers of approaching vehicles the exact location of the car. The Tiger-Ey principle also protects against accidents to cars parked at night without lights. The Do-Ray Tiger-Ey Reflex Foglite is furnished in two models, one with black enameled body; the other with chrome plated body. Both models are equipped with dust-proof and water-proof stainless steel doors.

## Ingersoll-Rand Announces New Compressor

A new line of fractional horsepower air compressors has been announced by Ingersoll-Rand Co., Phillipsburg, N. J. These units are made in ¼ and ½ horsepower sizes and are intended for tire line service and other small jobs. They have automatic start and stop control and are equipped with a new style seamless steel tank and improved check valve. An automatic protection switch is built in giving overload and undervoltage protection. Illustration is of a compressor with an 18-gallon tank. The ½ horsepower size is also available with a 35-gallon tank in either vertical or horizontal mounting.

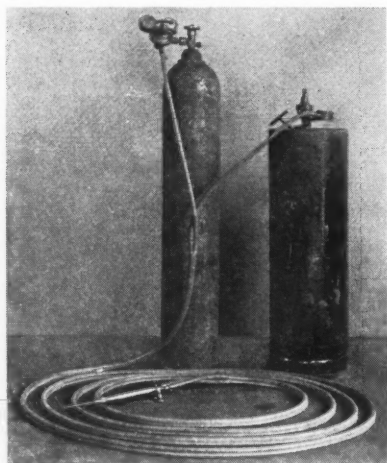


## Repair Kit for Fuel Pump and Carburetor

A new repair kit known as Contain-All-Kit for fuel pump and carburetor service has been announced by Hygrade Products Co., 516 West 34th St., New York City. Each kit contains a complete setup of internal parts for a designated unit. This insures that the unit will be properly and completely overhauled. The use of these kits opens up a new field for the repairman, making it possible for him to perform this type of service, which he heretofore has had to send out.

## New Welding Hose By Quaker City

The Quaker City Rubber Co., Comly & Milnor Sts., Philadelphia, Pa., has developed a new welding hose known as "Tu-Line." It is really two separate conduits made in one. Constructed of thick, live rubber, it will withstand tough service and yet is



soft and pliable. It is made decagonal (10 sides) so it will not roll underfoot. Furnished in a continuous length up to 300 feet, or supplied in convenient lengths to suit the customer. Made in 1/4 in. size only.

## Carlile & Doughty Battery Stand

Carlile & Doughty, Inc., of Conshohocken, Pa., makers of the well-known C & D batteries, have introduced a battery display stand which presents several outstanding features. Among these is the interpretation of battery output in terms of horsepower. This is graphically explained on the display showing the horsepower output of a standard equipment battery as compared to the horsepower output of an undersize battery and a battery that is recommended as being best suited for that particular car when taking into consideration the addition of radio, heater and other electrical accessories.

On the upper part of the display is a chart in color graphically showing the factory recommendations of battery requirements and a corresponding chart showing the performance ability of smaller and larger batteries of the light duty and heavy duty classifications so that a ready comparison may be made by the prospective purchaser and an intelligent selection made of the battery that is best suited to his requirements. Space is provided on the display for three batteries which, in addition, to assisting sales, makes it possible for the dealer to have in stock at all times three batteries, one of which will suit the purchaser.

The display is constructed of heavy cardboard and is produced in striking colors which make it an outstanding piece of modernistic salesmanship.

## New AC Oil Filter

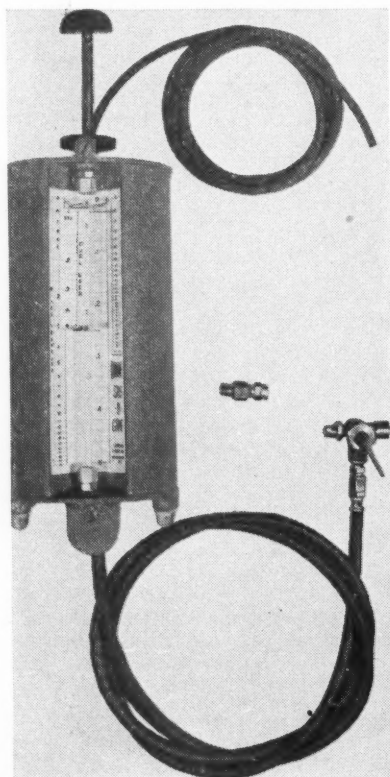
Reducing drastically the number of types required to service cars in the field, the AC Spark Plug Company announces a new and simplified oil filter installation plan, whereby only one oil filter will adequately provide filter service for 85 per cent of all automobiles.

The lone filter that answers these requirements is known as type W-21. Dealers can now stock the "W" type AC cartridges and use them for both replacement and original installations, it was announced.



## Gas Mileage Tester Announced by Lanoke

A new type gas mileage tester, known as Model 162 Gas-O-Graph, has been produced by Lanagan & Hoke, Inc., 1638 W. Hunting Park Ave., Philadelphia, Pa. The new instrument



attaches to the door window and fills itself by vacuum from the engine. An easily operated control valve directs the flow of gas to the carburetor either from the Gas-O-Graph or direct from the main tank. The scale on the tester is graduated in tenths of a gallon for the fuel used and there is also a graduation showing the computed total of miles per gallon traveled when compared with the actual distance the car was driven to consume a given portion of gasoline. The Gas-O-Graph unit holds any given quantity of gasoline up to 1/2 gal. Unlike the conventional gas mileage tester which holds 1/10 of a gal. of gas, the larger quantity of gasoline held by the Gas-O-Graph makes it possible to perform a more complete test of the gasoline consumption of the car. Net price—\$22.50.

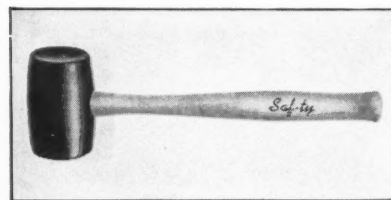
## Shurhit Announces New Stroboscope

The latest development by Shurhit Products, Inc., Waukegan, Ill., is their model DC stroboscope analyzer. With this equipment it is possible to check and set cam angle in degrees, synchronize distributor points, check governor advance, test coils and condensers and detect weak valve springs and sticking valves. It also makes a complete engine check of ignition and carburetion. The standard model is supplied with the approved service emblem of the car manufacturer when purchased by dealers representing a particular car. List price, \$352.00.



## Saf-ty Mallets

A new type of mallet has been developed and is now being offered to the trade by Martin Bersted Co., 20 E. Jackson Blvd., Chicago, Ill. These mallets are made of a composition molded material said to have unusual toughness combined with enough resiliency to make them suitable for body repair work.

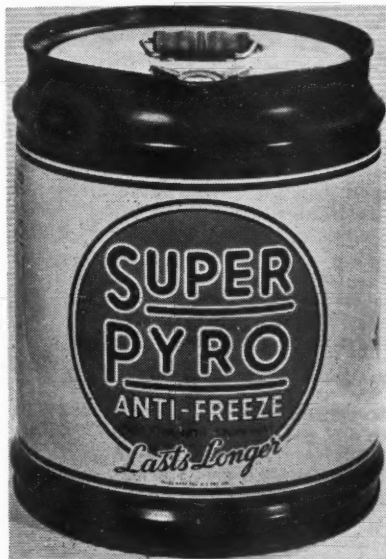


Saf-ty mallets are made in four different weights which is accomplished by their particular construction and does not necessitate loading or increasing the size. A two-color descriptive folder is available upon request.



## Anti-freeze

The golden green colored anti-freeze preparation, Super Pyro, is being continued for the coming winter season by the U. S. Industrial Alcohol Co., 60 East 42nd St., New York City. Over a million dollars spent in advertising throughout the country has made this product known to every



motorist. It is compounded with 200 proof denatured ethanol, and is used full strength. It is said to contain an exclusive inhibitor which protects against rust and corrosion, and is not injurious to metal or hose connections.

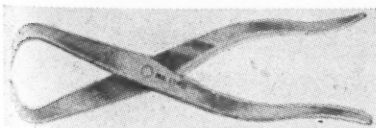
## New Package for Kant-Rust

The Kant-Rust Products Corp., Rahway, N. J., makers of Kant-Rust penetrating graphite lubricants are now marketing their products in new lithographed cans. Recent improvements in Kant-Rust products have greatly improved their quality and the introduction of Zero-Shift which was formerly known as Winter Kant-Rust is said to be particularly adaptable for thinning transmission and differential lubricants for winter service.

## Removes Wheel

### Balance Weights

The Turner Mfg. Co., Kokomo, Ind., makers of D & T wheel balance weights, has developed special pliers for quickly removing balance weights from the wheel when mounting new tires or making adjustments. The



twin jaws are pointed and wedge shaped to slide under the clips so that the plier action of the tool lifts them easily without distortion or damage to the weights, rims or wheels. Net price, \$1.25.

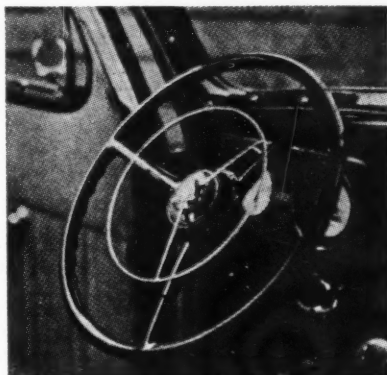
MOTOR AGE, December, 1937



"I told you not to clean that air gun with soap!"

## Universal Horn Ring

A new product of the Hamiel-Davis Co., 333 East Long St., Columbus, Ohio, is their Universal Horn Ring designed to fit any car having a horn button 2 in. or more in diameter.



It is attached to the present horn button by drilling three holes in the button. Ring is chrome plated and is shipped with chromium screws and nuts for attaching to the horn button.

## Alemite Catalog Issued

A new catalog has been issued by Alemite, a division of Stewart-Warner Corp., covering their complete Alemite line of lubricant dispensing equipment, connections and gages.

## New Auto-Lite

### Promotional Material

A new series of merchandising helps for dealers is being offered by the Electric Auto-Lite Company of Toledo, Ohio. This promotional material is based around the "Parade of Stars" which has featured Auto-Lite advertising for the past few months.

## Stanley Electric Tools

The Stanley Electric Tool Division of the Stanley Works, New Britain, Conn., has announced a new 3/16 in. electric drill designed for light work.



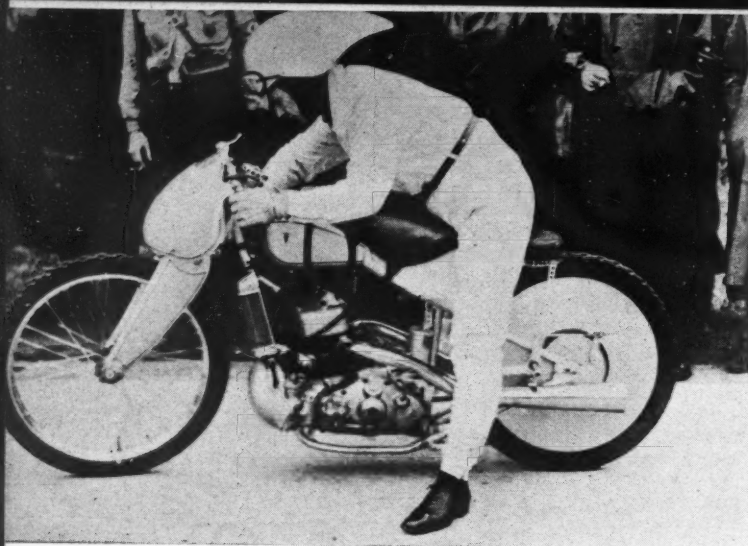
Its size permits close drilling for electrical and radio work and is available in three speeds. Gears are nickel steel, especially heat treated, the housing has aluminum alloy and is equipped with ball bearings. It is furnished in two styles—No. 362, with a switch in the end and No. 362H, which has an automatic pistol type handle with a switch mounted in the handle.

## New Noblitt Catalogs

New catalogs have recently been issued by Noblitt Sparks Industries, Columbus, Indiana, covering their complete line of Arvin car heaters and house radios.

## MORE NEW PRODUCTS

Among the Advertising pages  
in the back



#### Down the Column:

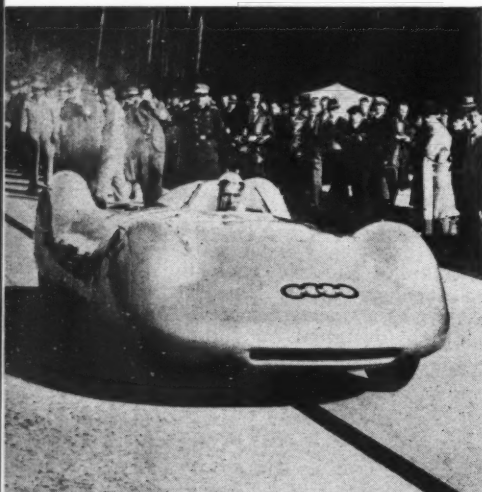
**Even the hat** was streamlined when German motorcyclists rode this speedy mount to eight new world records near Frankfurt.

**Auto Union** in the news again as Rosemeyer drives his powerful car 245.5 m.p.h. during international record week in Germany.

**Can't be done** decided Larry Ketzel when his motorcycle tried to go straight up in the air at a Los Angeles hill climbing contest.

**Landlubber battleship** made pedestrians blink when it appeared in Kent, England, as a mobile advertisement for Navy Week there.

**No fun** for Pilot B. C. Moore was his task of bringing plane with damaged wheel safely to earth at Newark. He made it with no casualties.



### Automobile Second to Food In Farmers' Basic Needs

The automobile is second to food in the basic, or existence, needs of farmers, coming ahead of shelter and clothing in family expenditures, according to a survey of farm families in Orange, Riverside, and San Joaquin counties, Calif., made by the Bureau of Home Economics of the U. S. Department of Agriculture. Until recently, economists listed the basic needs of families, both urban and rural, in the following order: food, shelter, and clothing. In surveys of family expenditures made a quarter of a century ago, transportation occupied such a small part of the expenses that the item was not listed separately.

"If the facts were not there in actual dollars and cents, it would be hard to realize the place the automobile has come to fill in the life of the farm family," said Dr. Louise Stanley, in charge of the survey which is the first of a nation-wide series which will investigate how income of farm families is expended.

Middle-class farm families embraced in the survey, having an average income of \$30 to \$35 a week, spend annually \$393 for food; \$193 for motor transportation (use of the automobiles for farm tasks was deducted); \$138 for clothing; \$134 for household operation; and \$80 for medical care.

### Motor Industry's Factory Sales Rise Sharply in October

October factory sales of motor vehicles are estimated at 340,920 units—an increase of 94 per cent over the previous month and 48 per cent over shipments for the same month of last year, in the regular monthly report released by the Automobile Manufacturers Association.

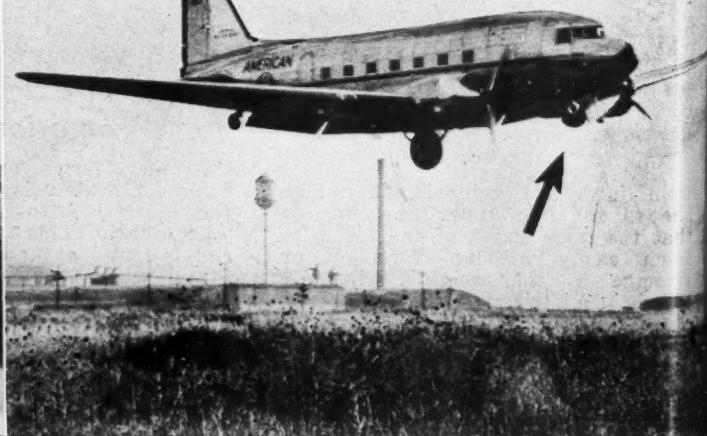
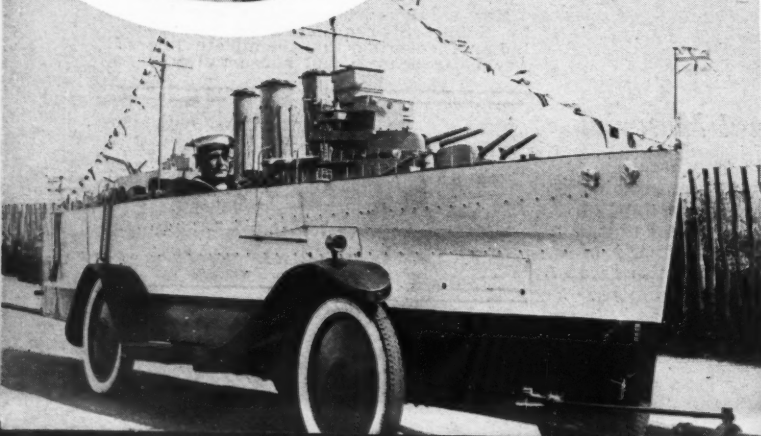
The Association reported that shipments of American car-makers during the first ten months of this year reached a total of 4,295,933—an increase of 16 per cent over last year and, except for the record year of 1929, the largest ten months' volume on record.

The Association's report is summarized below:

October, 1937 . . . .	340,920
September, 1937 . .	175,620
October, 1936 . . . .	230,049
10 months, 1937..	4,295,933
10 months, 1936	3,691,517

### Chrysler's Millionth

Chrysler Corp. has completed its one millionth car for the year 1937, thereby bettering its 1936 record by six weeks. By manufacturing 1,000,000 Plymouth, Dodge, DeSoto and Chrysler passenger cars, Plymouth and Dodge commercial cars, and Dodge trucks in ten months, the corporation has exceeded all its previous ten months' production records.





#### Down the Column:

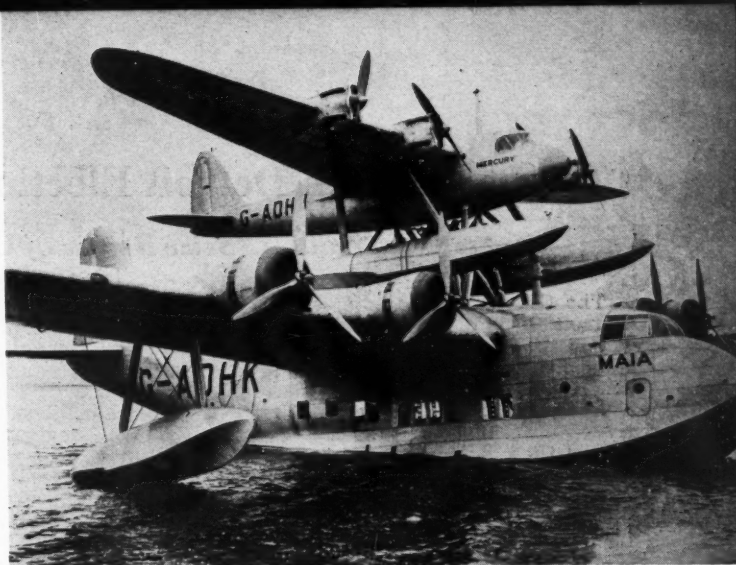
**Siamese Twin** plane completed in England. Unlike the famous twins, these come apart after the heavier ship is helped into the air.

**No Kiddy-Kar** is this pedal-powered machine built for economical operation by a Viennese inventor. It has three-speed gears.

**Latest model** Auto Union motorcycle established seven new records on its first run. Tail fin is for stability at high speeds.

**Two-story house** on wheels built in California. Upper story contains berths for two. Lower story contains double bed and kitchen.

**On the road** the upper story folds down. The car weighs only 4200 pounds and averaged 18 miles per gallon of gas on a recent test tour.



#### Alaska to New York Run Made by Truck

A Dodge truck, carrying a load of Alaskan potatoes, recently completed a 4,621 mile run from Ketchikan, Alaska, to New York City. The trip, not a speed run, was made in a total elapsed time of 188 hours, which included overnight stops.

The purpose of the trip was three-fold. To demonstrate the performance of Dodge trucks under grueling conditions, to indicate the closeness of Alaska to the United States by motor vehicle and to give impetus to projected plans for the building of an International Highway from Fairbanks, Alaska, to Seattle passing through Yukon territory and B. C.

#### UAW Files Ford Complaint

The International Union, United Automobile Workers, has filed a complaint against the Ford Motor Co. with the National Labor Relations Board, charging the company with violations of the Wagner Act, according to a statement by Richard T. Frankenstein, assistant president of the UAW.

His statement said the company is alleged to have taken immediate discriminatory action against various of its employees whose only misdemeanor was offering sworn testimony during the first NLRB hearings in response to the compulsion of subpoenas.

#### Ira Vail Plans Syracuse Race

Assurance that automobile racing's National Championship schedule would remain intact for 1938 has come with announcement that the New York State Fair, at Syracuse, has named Ira Vail to direct its speed events for the twelfth year.

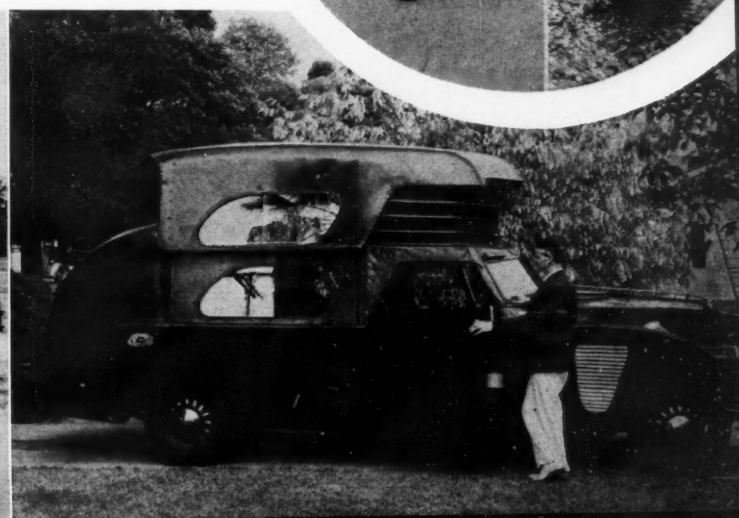
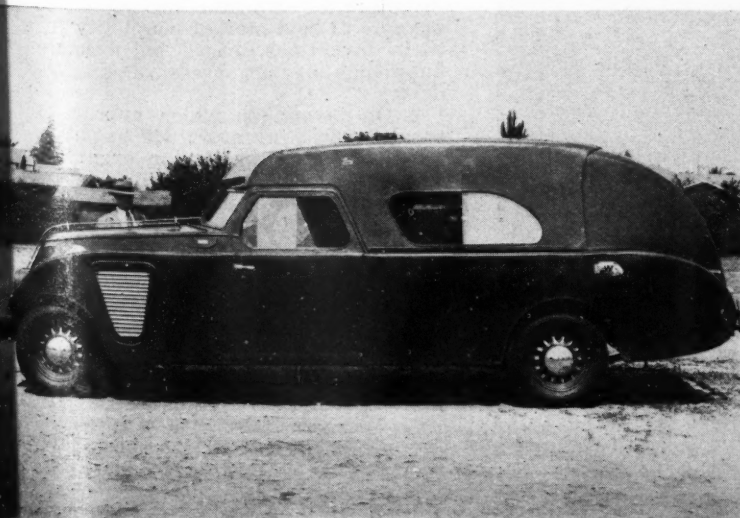
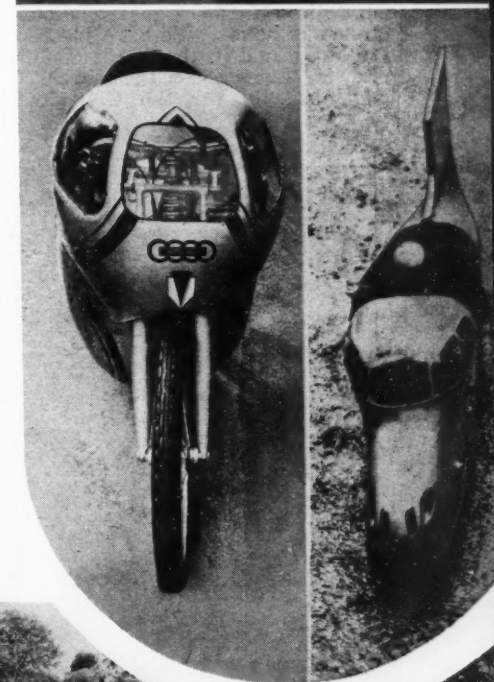
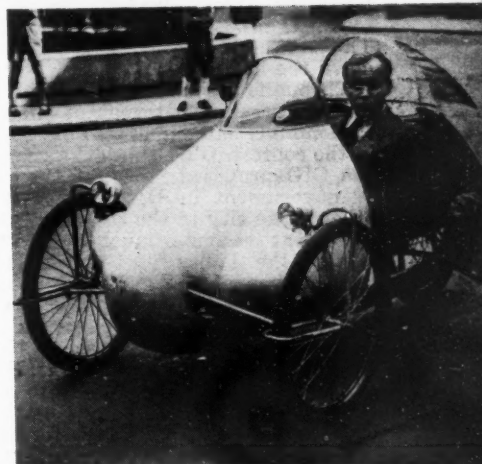
The veteran driver of the old school who moved to the managerial ranks a decade ago, indicated that he would begin immediate plans for a title event early in September next year.

Assignment of the 500-Mile International Sweepstakes at Indianapolis on May 30 and the 300-Mile George Vanderbilt Cup classic at Roosevelt Raceway on July 5 were announced in other issues of MOTOR AGE.

Contributing points to the championship rating this year along with Indianapolis and the Raceway, Vail's 100-mile race at Syracuse was the only dirt track event on the major circuit.

Although the date is too early to venture predictions as to how the new season will stack up, every indication points to the fact that with Syracuse "in" the National Championship schedule for the new year is virtually completed. If this remains the case, the 1938 card will duplicate that run in the season recently completed.

A pre-season survey by MOTOR AGE did not uncover any possible additions to the 1937 major circuit.



## CIO Swamped in Detroit Elections

### *Fails to "Seize Reigns of City Government"*

The CIO went into total eclipse in Detroit's municipal election when voters turned out in unprecedented numbers to administer a smashing defeat to all its candidates.

Richard W. Reading, the conservative standard bearer, decisively defeated the CIO's nominee, Patrick H. O'Brien, for mayor by a vote of 260,957 to 154,050. The five labor leaders, picked by the CIO for council members, failed to place. Nearest to victory was Maurice Sugar, UAW attorney, who trailed tenth in a list of 18 nominees, from which the voters selected nine. Frankensteen, Doll, Thomas and Reuther were farther down the line.

Throughout the campaign there was but one issue, the threat of the CIO to dominate municipal affairs. Early in the contest, O'Brien announced that the CIO proposed "to seize the reins of government in Detroit and every other large city in the country." This statement became a much-riddled target at the hands of the opposition before the campaign had gone far. O'Brien made several attempts to inject other issues without success. In one of the concluding speeches of the campaign, the UAW's president, Homer Martin, declared: "We say to them all this is just the beginning. We expect to build our political forces in every city in this state. We expect organized farmers to reach out and take our hands. We have just started to build, and in the words of John L. Lewis, 'Labor is on the march.'"

Unhappily for the CIO, its first

major political effort was made in a city where non-partisan government was a much cherished institution, wrested from the machine politics of ward-healers two decades ago. Reading championed non-partisan and uncontrolled government, characterizing his opposition as "political marionettes of CIO bosses." O'Brien, distinctly partisan, represented well-organized labor minority and attempted also to invoke the support of Democrats. One of his slogans was "Let's bring the New Deal to Detroit." In fact, his entire campaign had a New Deal flavor, with lavish promises of lower rents, reduction in taxes and food prices. He advocated municipal ownership of the Detroit Edison Co., Detroit City Gas Co. and "a yard-stick milk distributing plant."

While purporting to represent labor, the CIO slate by no means received the united support of industrial workers in general. Officially, the AFL endorsed Reading, although some of its discordant units backed CIO candidates who also derived some strength from other voting groups. The UAW carried on a strenuous campaign, with precinct organizations set up in all the wards where wage earners predominated. Money was spent freely, and there were reports of a substantial fund made available for the Detroit campaign by outside CIO units. One authority figures the campaign cost the CIO \$175,000. He said the union had offered to buy \$80,000 of radio time but succeeded in obtaining only a small part of this.



**Frank Tighe** who quit his job as managing editor of *Motor Age* to write publicity items for Studebaker, knowing our weakness for the "form divine" sent the above picture. I'll take the one sitting on top of the car, Frank. Incidentally, I'd say Frank is falling down on the job as he mentioned that Jimmy Wallington and Jacques Renard were shown in the picture, but failed to give the names of any of the girls.

## Tire Prices Advanced

Following the Oct. 27 lead of the U. S. Rubber Company, major Akron tire manufacturers, including Goodrich, Goodrich, Firestone and General, made new and higher retail tire price lists effective Nov. 1, and simultaneously announced adjustments in dealer discounts and volume rebates, and commercial account discounts. Dealers and manufacturers benefit about equally from the higher prices.

Prices on third and fourth line tires are raised from 3 to 6 per cent under the new schedules with prices advanced only from 1 to 3 per cent on first and second line tires. Volume bonuses for dealers are widened. Whereas they ran from 1 to 10 per cent with the maximum of 10 per cent applying on an annual volume of \$15,000 or more, they have been extended to 15 per cent on \$50,000 annual volume or more, thereby benefiting the larger operators. Dealer discounts for the most part remain the same on first and second lines, at list less 20 and 5 per cent. On third and fourth lines dealer discounts are narrowed from 17½ to 5 per cent to 15 and 5. Commercial account discounts which have been list less 15 have been narrowed to list less 13½ per cent with special volume bonuses thrown in for larger commercial accounts. These bonuses run from 5 per cent per \$500 order up to 7 per cent on \$1,000 or larger orders. Dealers handling commercial accounts are also given new bonuses for large accounts.

Although the price increase comes in the face of an extremely soft crude rubber market, with crude prices under 16c. per lb., manufacturers say that current crude prices have no relation to tire costs, as higher priced rubber is now being processed into tires.

## Denham & Co. Announces Service for Inventors

A new service designed to bridge the gap between inventors of ideas of potential use to the automotive and allied industries and the men to be reached in the industry itself is announced by Denham & Company, Book Bldg., Detroit, specialists in market development of industrial and automotive products. The new service will operate entirely independently for the benefit of inventors. The service comprises:

1. Consultation with and advice to inventors on whether or not there appears to be a market possibility for their inventions, based on intimate knowledge of the needs of the industry.

2. On inventions which appear to possess merit, inventors will be put in touch with the particular organizations and men most likely to be interested in the development.

3. If desirable, direct assistance will be furnished inventors in the marketing of their products.

Recognizing that many inventors do not have adequate capital or facilities to establish personal contacts with the industry, this service—operating on a small fee basis—is believed to fulfill an important need.



## Ford Publishes

### Decoration Manual

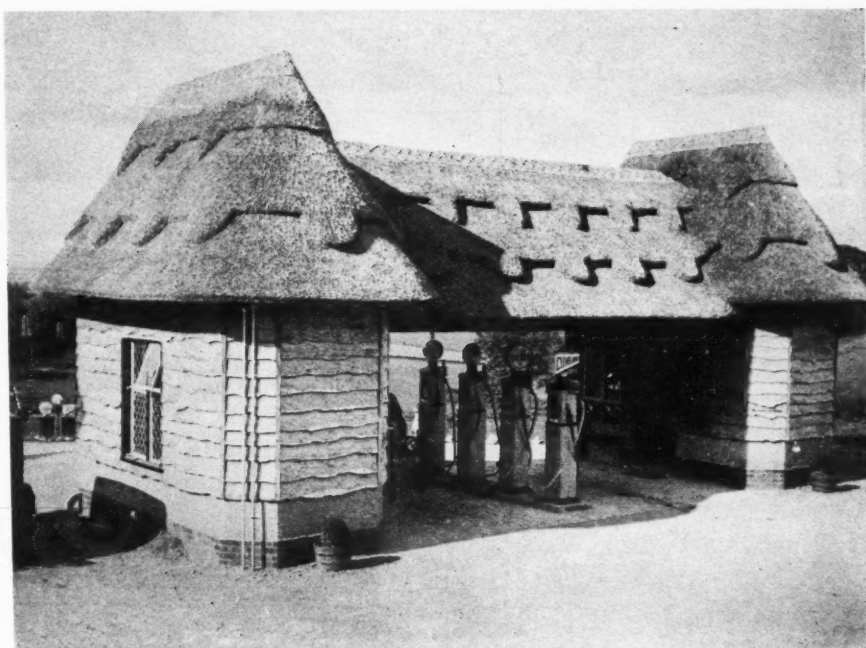
Because of the results achieved through its recent campaign to encourage modernization of dealership buildings, the Ford Motor Company is preparing for distribution a new manual of dealership interior decoration, it was announced today.

The new book will outline the most attractive arrangement of displays, rearrangement of sales rooms to provide the best use of available space, appropriate furnishings and the solution of other related problems.

Material for the new volume, accumulated in an exhaustive field survey, has been adapted to the special needs of Ford dealers through consultation with interior decorators and automobile sales authorities.

Ford executives asserted the forthcoming volume will make available the most complete treatment in the industry of dealership improvements and refinements.

The work on interior decoration has been planned as a supplementary volume of "Modern Dealership Buildings," which was issued by Ford Motor Company several months ago and has stimulated dealers throughout the country to carry out modernization programs in their quarters. It contains suggestions, plans and specifications for construction of buildings, renovation of present buildings and decentralization of service departments.



**Old English** type of thatched roof covers a very modern service station in Devon, England.

## Federal Taxes to Cost Motorists

### \$35,000,000 More in 1937

An increase of 10 per cent in the cost to motorists of federal automotive taxes is anticipated for 1937 by the American Petroleum Industries Committee on the basis of revenue for the first nine months of this year. This increase, the committee estimates, will add \$35,000,000 to the federal tax bill of motorists.

Of the nine levies which comprise

this group, the duplicating federal gasoline tax, levied at one cent per gallon, is the most expensive. This year it will account for 50 per cent of the cost of all federal automotive taxes and will total approximately \$200,000,000.

Below are tax totals for the first nine months of this year and last year:

Kind of Tax	First Nine Months		Per Cent Increase
	1937	1936	
Gasoline .....	\$148,496,874	\$135,832,192	9.3
Lubricating oils .....	26,084,428	21,599,378	20.8
Transportation of oil by pipe line.....	9,323,488	7,803,125	19.5
Crude petroleum processed, etc. ....	723,461	643,558	12.4
Trucks .....	7,053,640	6,454,090	9.3
Automobiles .....	50,989,673	47,417,116	7.5
Parts and Accessories .....	6,877,514	6,001,357	14.6
Tires .....	25,722,910	24,343,736	5.7
Inner Tubes .....	5,054,621	4,897,957	3.2
<b>TOTAL.....</b>	<b>\$281,326,619</b>	<b>\$254,992,508</b>	<b>10.3</b>

## Chek-Chart Appoints Cullen As Associate Editor

The Chek-Chart Corporation recently announced the appointment of W. Joseph Cullen as associate editor of Chek-Chart. Mr. Cullen has been associated with the Sinclair Refining Co., where his activities covered securing and checking original lubrication data



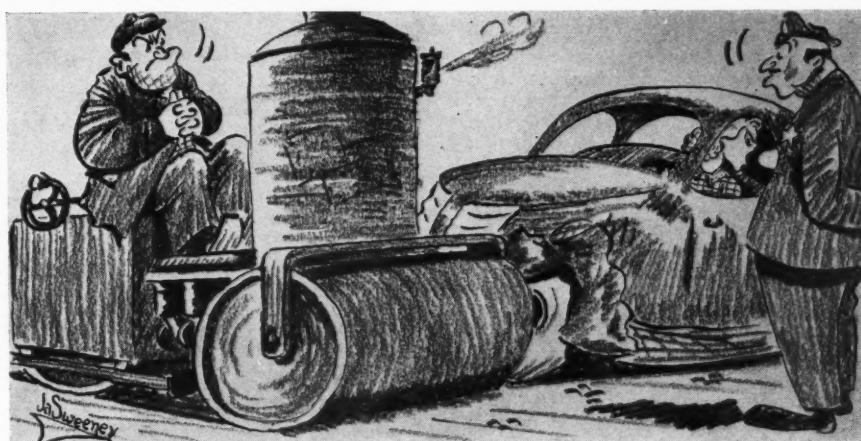
W. J. Cullen

from car factories for Sinclair manuals, sales engineering work, running field tests on automotive units, and industrial lubrication work.

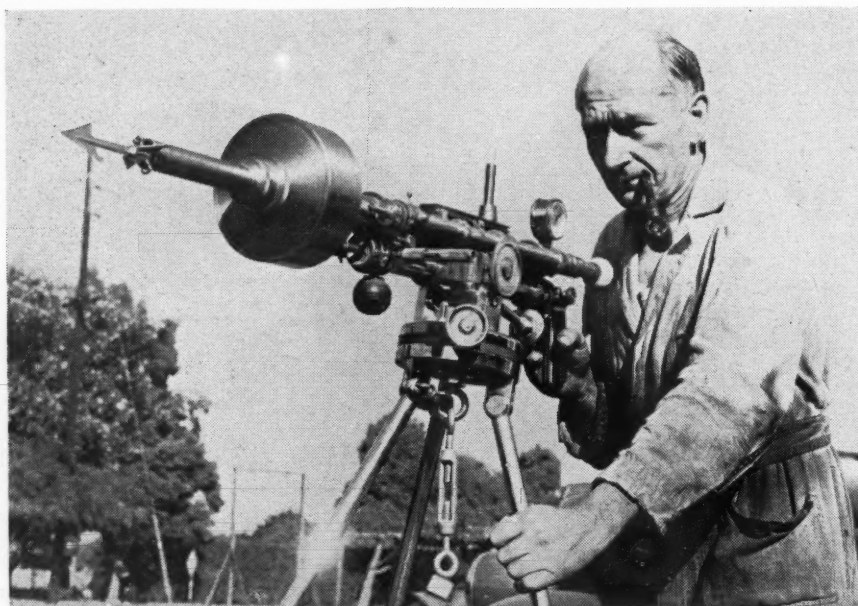
His knowledge and experience will be called upon to broaden the service of the Chek-Chart editorial department to clients and subscribers.

## A.A.A. Convention Held in New York City

Mounting motor taxes, misuse of these funds through diversion, the national dearth of adequate parking facilities, and the rising tide of traffic congestion and delays are principal problems that were wrestled with when representatives of organized motorists gathered in New York City, Nov. 19 and 20, to participate in the thirty-fifth annual convention of the American Automobile Association.



"Arrest him officer—he shot right out in front of me!"



**Thar She Blows** — Dutch Klein, old-time race driver with his silent whaling gun. The new air gun will shoot a harpoon and line 100 feet with 450 lb. pressure.

## Akron Hits CIO Politics

Akron business and industrial leaders saw strong possibilities of an immediate halt to the decentralization of tire manufacturing and of a re-concentration of operations there as a result of the overwhelming defeat administered to organized labor with its strong CIO backing, in the Akron mayoralty election. Mayor L. D. Schroy, Republican and "Home Rule" candidate was re-elected by a majority of 8112 votes over former municipal Judge Garnet L. Patterson, running on the Democratic ticket as the candidate of organized labor.

The election plainly was a test of the strength of the CIO in Akron where it had recently won collective bargaining rights by wide margins in two of the city's largest tire factories—Goodyear and Goodrich.

Prior to the election it was freely predicted that if labor won the mayoralty race the major tire companies, which had been harassed by scores and hundreds of sitdown strikes, would accelerate their decentralization and further reduce operations in Akron. Goodyear already has set up branch tire plants in Jackson, Mich., Gadsden, Ala., and has subsidiary companies in Maryland and California. Firestone has a large new tire plant at Memphis, Tenn., a latex products plant at Fall River, Mass., and is building a wheel-and-rim and accessories plant at Riverview, Mich. It also has a Pacific Coast factory. Goodrich has a new tire plant with 5000 daily capacity at Oaks, Pa., and a new mechanical rubber plant.

CIO leaders openly backed the Patterson candidacy in organized labor's fiercest battle in any Ohio city to become a political power. Patterson for-

merly was an attorney with the National Labor Relations Board. The vote in Akron set an all-time high for a municipal election with 80,302 votes cast, Schroy getting 44,207. Schroy had the solid backing of Akron business and industrial leaders.

## Bear President Discusses Safety Drives

In an address before a meeting of the International Garage & Maintenance Association, Mr. Will Dammann, president, Bear Mfg. Co., Rock Island, discussed the nation-wide trend to rigid safety tests, and pointed out that the American Legion and various insurance companies are now getting solidly behind these safety movements.

"In California," said Mr. Dammann, "the Legion is locally interesting itself very much in the promotion of safety. They feel that, with their great nation-wide organization, they are the logical sponsors of such a campaign, and it is their opinion that the Legion generally will get behind the move."

"In the East, a plan is now being placed in effect in a limited way by some of the insurance companies which will require twice-yearly inspection of every policy-holder's car. The penalty for failure to observe this regulation is cancellation of the policy. The Bear Company is extending fullest cooperation in this worthy drive, and all our facilities for producing safety testing equipment are placed at their disposal. Every car driver will see the wisdom of this plan."

## The Automobile Industry During Year Ending September 1937

Compiled by Alfred Reeves, Vice President  
Automobile Manufacturers Association

Production and Value	
Car and truck factory sales, U. S. and Canada.....	5,102,000
Passenger cars .....	4,163,000
Motor trucks .....	939,000
Percentage increase over 1936.....	12%
Wholesale value of cars, U. S. and Canada.....	\$2,336,300,000
Wholesale value of trucks, U. S. and Canada.....	\$ 540,200,000
Wholesale value of cars and trucks combined.....	\$2,876,500,000
Wholesale value of parts and accessories for replacement, and service equipment .....	\$1,075,000,000
Wholesale value of rubber tires for replacement.....	\$353,000,000
Motor vehicles, accessories, service equipment and replacements of parts and tires .....	\$4,304,500,000
Registration	
Motor vehicles registered in U. S. ....	29,000,000
Motor cars .....	24,600,000
Motor trucks .....	4,400,000
World registration of motor vehicles.....	41,750,000
Per cent of World's automobiles in U. S. ....	70%
Taxes	
Total motor vehicle user taxes.....	\$1,565,000,000
Gasoline taxes, federal, state and municipal.....	\$975,000,000
Percentage motor user taxes to all taxes from all sources, federal, state and local .....	15%
Employment	
Employment, manufacturing autos, bodies & parts.....	515,000
Weekly payroll, wages .....	\$16,000,000
Motor Trucks and Buses	
Motor trucks in use .....	4,400,000
Total special motor truck taxes.....	\$418,000,000
Fleets of more than 5 trucks, number of operators.....	29,750
Number of truck drivers .....	3,150,000
Communities served exclusively by trucks.....	48,500
Motor buses produced .....	18,000
Motor buses in use .....	127,000





# PROFIT per BATTERY...

## how the Exide Dealer does it

Until you know the Exide Proposition, you may find it hard to believe that Exide Dealers sell so many high-capacity, high-profit batteries. But they do—and one of the reasons is the name “Exide” on the container. After all, where else is a quality buyer more likely to go than to an Exide Station?

Another reason is the new Exide Vendor

that sells the higher-profit Exides—*automatically!* Plus the remarkable Exide Service Tools and Tester that not only make battery service easy, but actually help to make sales—high-profit sales. *Easy Does It!*—with Exide.

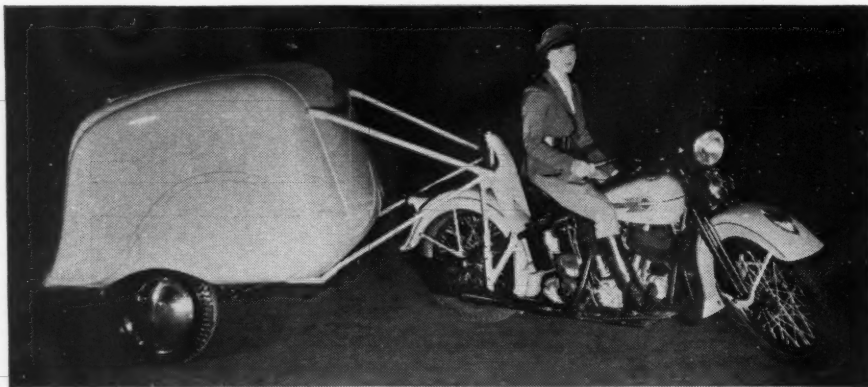
If you don't know the latest facts on the Exide Proposition, *find out.* Write us, or see your Exide Wholesaler today.

THE ELECTRIC STORAGE BATTERY CO., Philadelphia  
The World's Largest Manufacturers of  
Storage Batteries for Every Purpose  
Exide Batteries of Canada, Limited, Toronto

WHEN IT'S AN EXIDE



YOU **START**



**Attractive** Cycle Car is the streamlined Tralette, built by the Peninsular Metal Products Corp., Detroit, Mich.

## Anti-knock Demonstration Motor

*Developed by Ethyl Corporation*

A demonstration motor which illustrates the advance in automotive power and performance has been developed by engineers of the Ethyl Gasoline Corporation. The mechanism is described as "the only instrument yet designed which shows actually how various gasolines react in a motor."

Representing the results of a long period of improvement in devices of this kind, the motor consists of a single cylinder four cycle engine originally manufactured as a farm light unit. The compression, ratio, however, has been raised to approximate the ratios found in the modern motor cars, and because of this ordinary gasoline will detonate or knock whereas Ethyl gasoline will not.

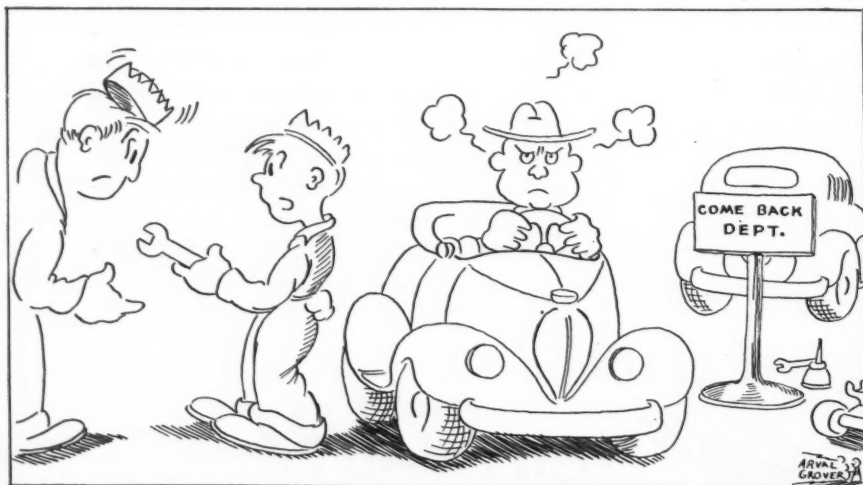
The motor is directly connected with a generator, the power output of which is dissipated through resistance coils. The amount of electrical energy generated is recorded on a Watt meter and, while this does not show directly the power of the gasoline motor, it is in direct ratio, and may therefore be said to indicate the power output of the gasoline motor.

While the knocking or detonation of the motor is audible in most instances, it is also recorded visually by

means of lights on the instrument panel which are activated through the Midgley bouncing pin. Designed by Midgley during the search for an anti-knock compound which resulted in the development of Ethyl fluid, the bouncing pin is formed of a hollow cylinder inserted in the combustion chamber flush with the head of the cylinder. The bottom is closed by a small sensitive diaphragm on which rests a pin which is free to move up and down.

The sharp high pressures which occur when detonation takes place deflect the diaphragm, impelling the pin to move up. This upward movement of the pin closes an electrical circuit, causing the lights to burn. When the pressure is relieved the pin drops back to its normal position and the circuit is opened. In operation, when the motor is knocking, the lights flash constantly since the pressure waves are continually rising and falling.

The demonstration motor graphically portrays the improvement in automobile operation accompanying the introduction of leaded gasoline, which now powers more than 70 per cent of the nation's cars and which has become a principal factor in the development of commercial and military aviation.



"The wrench he borrowed in '29 won't fit his new model!"

## 1938 Pistons

### *Fit Closer*

Piston fits on 1938 automobiles are closer than ever before in the history of the automobile industry, according to a report just made by the laboratory of the Bohn Aluminum and Brass Corporation. This organization which has just completed an intensive study of piston installations in connection with 1938 models notes that along with another general upward trend in compression ratios there has been a corresponding decrease in piston clearances.

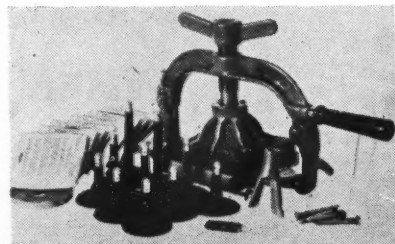
Commenting on this fact the report states as follows: "In connection with the new Autothermic piston which will be installed on a number of 1938 models piston fits are ranging from .0005 to .001 in. clearance. This may be contrasted with the original clearances required in aluminum pistons which ran up as high as .006 to .008 in.

"In spite of the much closer fit there has been an actual reduction in frictional horsepower losses and laboratory tests show less wear with more than double the useful life of the piston. Less frictional heat is developed, the engine is quieter and will remain quieter for a greater length of time. These conditions are due to a greatly improved thermal control of the piston, the effects of expansion being nullified by the construction. Tests at all temperatures show that the clearance does not decrease as the piston reaches running temperature but rather remains approximately constant."

The report from which the above quotations are made covers a tremendous amount of data which has been secured from the laboratories of car manufacturers as well as that of the Bohn Aluminum and Brass Corporation where a large number of Dynamometer tests on various piston installations have recently been completed.


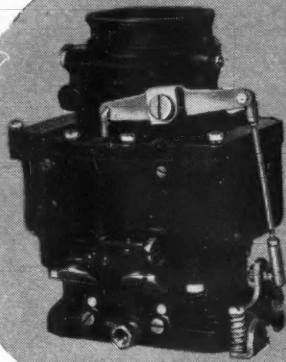
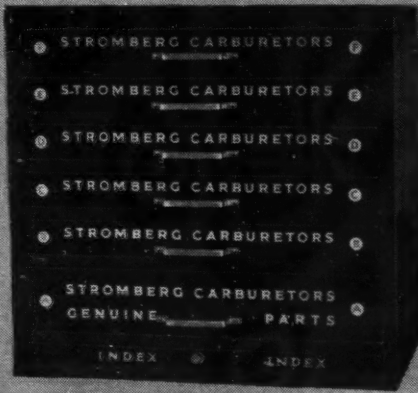

## Tube Vulcanizer Set

A. Schrader's Son has now added to its line of tire valve products a valve and tube vulcanizer set, which will take care of the entire range of rubber covered valve replacement applications in one unit. The set consists of one vulcanizer and ten Schrader rubber covered replacement valves, with a heat unit for each valve. The use of the vulcanizer requires no special wiring or electrical attachments. For complete information and prices write A. Schrader's Son, Division of Scovill Mfg. Co., Inc., 470 Vanderbilt Avenue, Brooklyn, N. Y.





*Any way  
you figure-*

## It's *smarter* to sell Stromberg!

No matter how you figure, if you're in business to stay (you hope!) here's something you can bet on—forever:

***There isn't anything as satisfactory  
to sell as satisfaction***

The best personal friend you've got won't continue to buy service from you unless your service and your merchandise are satisfactory to him.

Now—we *know* because it's our business to know, that Stromberg is the most thoroughly satisfying carburetor money can buy. If anybody challenges this, refer him to us and we'll prove it. Fair enough?

O. K.! Then why not sell and service Stromberg Carburetors? Why be content to identify your business with anything less than the World's Number One Carburetor? The volume is there; the

prestige is there; the good will is there; the satisfaction is there. That being so, you can rest assured *the profit is there!*

***Here's Guaranteed  
Carburetor Service Profits!***

This handsome steel cabinet (*illustrated*) stocked with all needed parts and complete renewal carburetors, with separate gasket cabinets, covers all standard-equipment Stromberg Carburetors since 1931. It has a built-in Index System. It lists complete at \$310, less usual liberal Stromberg trade discounts. **IT IS GUARANTEED AGAINST OBSOLESCENCE FOR ONE FULL YEAR.** Any slow-moving parts returnable for full credit!

**BENDIX PRODUCTS CORPORATION**

Stromberg Carburetor Division

(Subsidiary of Bendix Aviation Corporation)

401 Bendix Drive

South Bend, Indiana

# STROMBERG

**Deservedly The World's Number One Carburetor**



**Dressed Up For Brake Service** Raybestos is featuring a moderately priced Complete Brake Service Department Deal which provides easy means for garagemen to dress up their shops so that more brake jobs will be attracted instead of repulsed by appearance.

The good-looking colored awning requires only eight feet of wall space and the proper equipment to do an efficient brake job will neatly fill out a day in any garage.

Servicemen who have already taken advantage of this very complete Deal, report that their new set-up makes it much easier to sell brake service and PG (Proving Ground) Sets and what is even more important—THEY GET THEIR PRICE.

### Hardware Assortment Offered by Insuline Corp.

A complete line of small-hardware assortments, intended for electrical, radio and automotive service shops and for home use by amateur craftsmen, has been brought out by the Insuline Corporation of America, 25 Park Place, New York, N. Y. The parts are supplied in indestructible flat metal boxes having hinged lids and 12 individual compartments, the following assortments being available: master screw and nut assortment, all purpose radio hardware and equipment, insulated washers and grommets, and master miscellaneous assortment, consisting of rivets, lugs, washers, etc.

Insuline also announces a line of square-type glass jars with screw caps, filled with individual hardware items such as screws, nuts, washers, rivets, etc. A total of 81 different items is available. These jars stack neatly on shelves and keep their contents clean and free of dust. For counter display purposes, dealers are furnished gratis with a decorative metal rack holding 36 of these jars.

### New Republic Distributors

Five new distributors for Republic tubular products have been announced by N. J. Clarke, vice-president in charge of sales of Republic Steel Corporation, Cleveland, Ohio. These include: Bomar Gross, Inc., Jamaica, N. Y.; Drake Supply Co., Los Angeles, Calif.; Iowa Machinery & Supply Co., Des Moines, Iowa; Wilkins Pipe & Supply Co., Peoria, Ill., and Woodmanse Mfg. Co., Freeport, Ill.

### Globe Union Expands to Raise Production

Globe-Union, Inc., 900 E. Keefe Ave., Milwaukee, manufacturers of storage batteries, spark plugs, radio parts, etc., has moved its branch factory at Seattle, Wash., into a new building. This move makes possible a local production of 500 batteries daily.

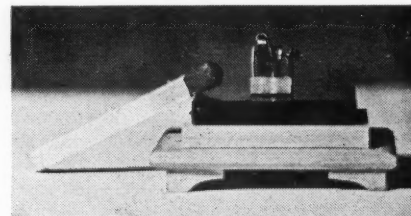
The Seattle factory was established about four years ago and was supplemented during the past 18 months with an additional production unit for batteries at Los Angeles.

### Hutto Division of Carborundum Company Sold

The assets and good will of the Hutto Machine Division of the Carborundum Company have been sold to the Micromatic Hone Corporation, of Detroit, Michigan, and the Barnes Drill Company, of Rockford, Illinois, and the business will be subdivided by the purchasers. Barnes Drill Company will absorb that part of the business relating to the manufacture, sale and service of honing machines and gear lapping machines, and the Micromatic Hone Corporation will take over the manufacture, sale and service of honing tools and tool replacement parts. The Micromatic Hone Corporation will also carry a full line and render a complete replacement service of Carborundum brand cylinder honing stones for all customers, as well as for other lines of leading abrasive honing sticks.

No reduction of the present personnel of the Hutto Division is anticipated by the new owners. Mr. Kirke W. Conner will serve as chief executive of the combined organizations relating to honing tool manufacture.

### Small Things

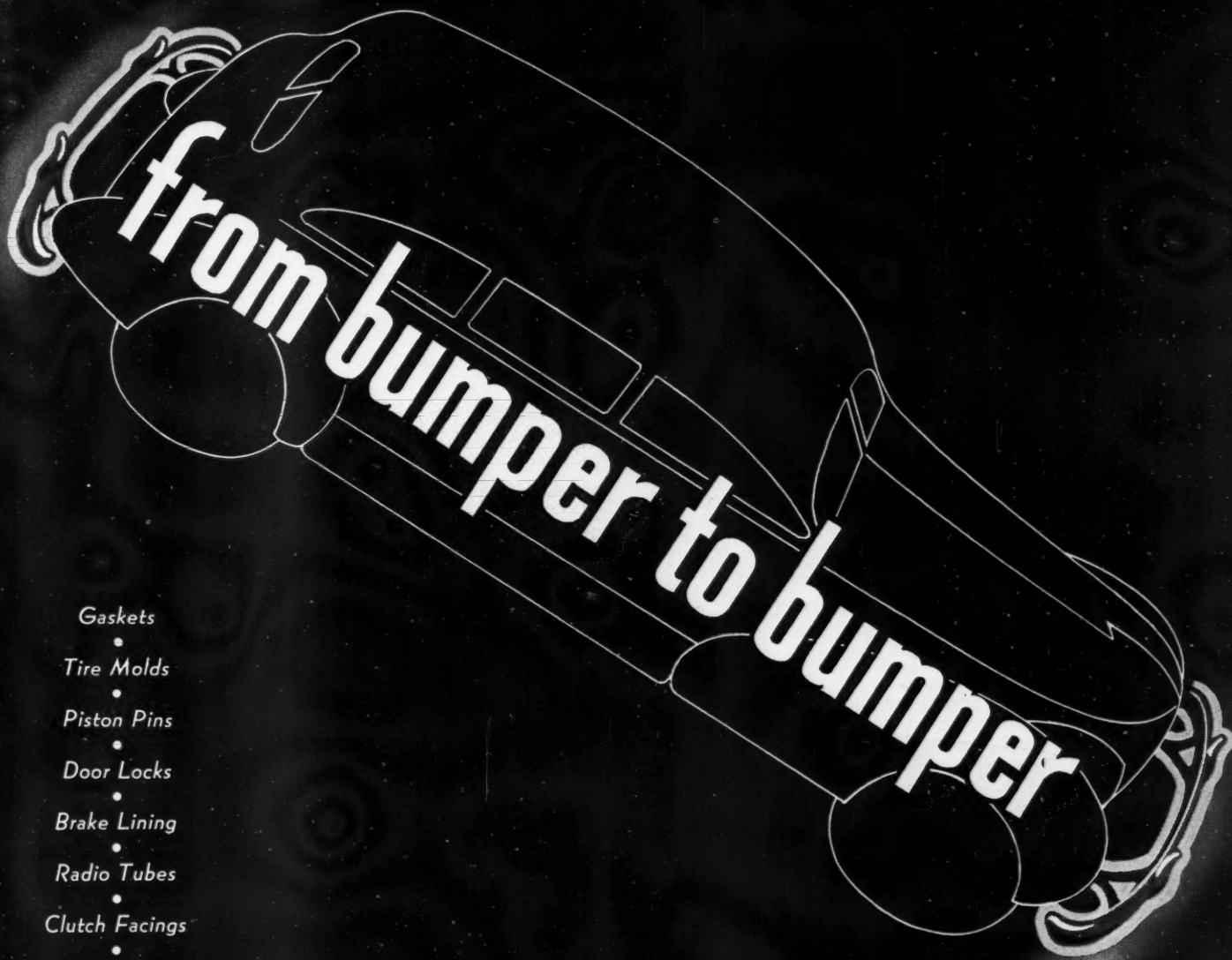


A man who does things on a small scale and makes a comfortable living out of it, is Jules Charbneau of Seattle, Wash., who travels the world over gathering miniature curios and exhibiting them. The collection which numbers 25,000 items, is now on display at the Radio City Music Hall, New York City. Here is the smallest electric motor in the world. It generates 1/1,000,000 horsepower. It is the work of Ted Brown of Los Angeles. Comparative size is indicated by the paper match.



"A clean rag!"





Gaskets  
•  
Tire Molds  
•  
Piston Pins  
•  
Door Locks  
•  
Brake Lining  
•  
Radio Tubes  
•  
Clutch Facings  
•  
Headlight Bulbs  
•  
Cooling Systems  
•  
Aluminum Piston  
Manufacture  
•  
Distributor Point  
Manufacture  
•  
Battery Terminals  
•  
Rubber Mountings  
•  
Springs and Chassis

The column on the left enumerates instances in automotive manufacture wherein "dag" colloidal graphite is used. And along with these, of course, should be included the well-known use as a supplementary lubricant for crankcase and upper cylinder protection. Some of these applications have been developed by the user and others by our own Technical Department. In practically every case, our Technical Staff has lent valuable assistance. They will be glad to co-operate in any problem in which you feel "dag" colloidal graphite may be helpful. Write for descriptive booklet No. 700.

ACHESON COLLOIDS CORPORATION • PORT HURON, MICHIGAN

REG. U.S. PAT. OFF.  
**dag**

**COLLOIDAL PRODUCTS**

COPYRIGHT 1937, ACHESON COLLOIDS CORP.

**COLLOIDAL GRAPHITE**

"DAG" COLLOIDAL GRAPHITE IS A 100% AMERICAN MADE MATERIAL

## Many New Models Shown at Newark Truck Show

An unexpectedly large number of new trucks were on display at the opening of the fourth annual motor truck show in Newark, N. J., on Nov. 6. Manufacturers have become more sympathetic with the object of the show so far as its value as a medium of presentation of new developments is concerned, and in several cases showed new models there for the first time, or showed them there just after the closing of the New York Automobile Show. The sweep to cab-over-engine trucks has by now affected almost every manufacturer.

In addition to the actual exhibition of new models at the motor truck

show, it was reported there as having been stated by factory sources that the Ford Motor Co. is to bring out two new cab-over-engine models, factory-built. They will be ready in February, 1938. One will be on a 101-in. wheelbase and the other on a wheelbase of 131 in.

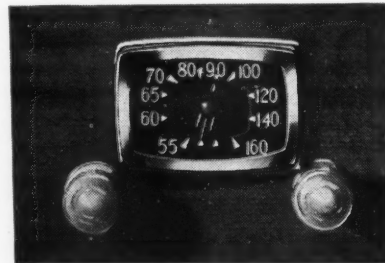
New models appearing at the show included an example of a new line of cab-over-engine trucks manufactured by the Brockway Motor Co., a new bus chassis with the engine very far forward, available for the last few months but designated as a 1938 development, manufactured by the Reo Motor Car Co., three new GMC

models, described as  $\frac{3}{4}$ -ton, one-ton, and 1 $\frac{1}{4}$ -ton, the Studebaker Fast Transport, a new cab-over-engine model made by the Dodge Division, Chrysler Corp., and a White 40-passenger city bus powered by the 12-cylinder, under-the-floor engine. A special GMC airport refueling truck was also on exhibit. In addition, a number of new truck bodies were shown by leading body manufacturers including the Heil Co., Gar Wood Industries, Inc., American Coach & Body Co. and others.

The beginnings of a trend toward building-in the safety devices and signals required by the Interstate Commerce Commission and the several state highway codes were noticeable at the show. Direction indicators, marker lights, headlights, horns, the latest in braking systems and the like are now supplied as factory-designed installations, and in some cases are so built in as to become part of the overall design. Brockway, for example, includes front direction indicators built into the front end sheet metal. The trend toward the use of bright colors and pleasing appearance clearly continues. A number of manufacturers have so constructed the driving compartments as to provide most of the conveniences now demanded on passenger cars. Special attention has been paid to the comfort and safety of the drivers. GMC offers factory built radio equipment.

## Universal Radio Dials

The F. W. Stewart Mfg. Corp., 340 W. Huron St., Chicago, Ill., has standardized on radio control dials thus eliminating the necessity of developing a new dial for each model car. Their new dials are made up in both



the airplane and the wrist watch types and present an attractive appearance in keeping with current model cars. They are arranged so that they may be illuminated either by edge lighting or direct lighting.

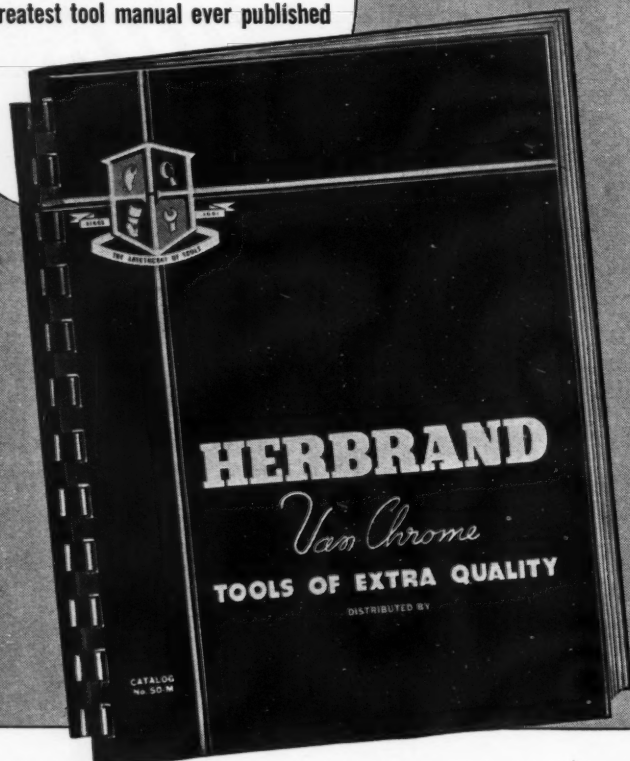
## Sight Feed

### Generators Improved

Many improvements have been incorporated in the new model 12-P Sight Feed Generator made by the Sight Feed Generator Co., Richmond, Ind. Among the improvements listed are the addition of a large sludge drain valve which simplifies recharging of the generator and the addition of swivel casters making it possible to turn the generator around in a smaller space than was heretofore possible.

Get this  
180 Page Book  
**FREE**

It's the greatest tool manual ever published



**ACT now!** Get a free copy of this valuable 180 page book which is packed from cover to cover with up-to-date information and data on tools.

You'll be amazed when you see all the new tools and methods Herbrand has developed to help mechanics save time and labor. Tough jobs are made easy with the aid of these new Herbrand tools designed to help you turn out service jobs quicker and easier—and at a greater profit.

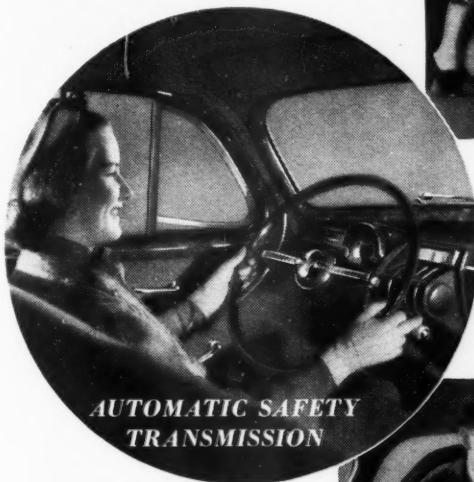
Ask your Herbrand jobber for Catalog No. 50-M, or write us.

**THE HERBRAND CORPORATION - Fremont, Ohio**



# SELL THE CAR WITH PLENTY NEW TO TALK ABOUT!

**I**f you want to make profits and build a sound, substantial business, you want a line that gives you plenty to talk about—a *dual* line of modern, youthful cars like the dashing new Oldsmobile Six and the dynamic new Oldsmobile Eight. Style-Leader styling—the greatest parade of features ever announced in new cars—and the new Safety Instrument Unit, Safety Dash and Safety Interiors give you a story to tell that can't be equalled by any other car. Sell the big, new cars with big, new sales appeal. Sell Oldsmobile! There are still a few open points with big sales potential.



The engineering scoop of the year—Automatic Safety Transmission, optional at extra cost on all models.

(right) Oldsmobile interiors feature new and exclusive provisions for safety. The rounded front seat-backs are heavily padded.



Once again, the new Oldsmobile Six and Eight are setting a new style trend for all America to follow.

(right) All instruments are grouped in a compact Safety Unit. The dash is free from protruding control knobs and buttons.



## WRITE FOR INFORMATION

D. E. Ralston, General Sales Manager,  
Oldsmobile Division, General Motors Sales Corporation,  
Lansing, Michigan.

I, too, am interested in stepping ahead with Oldsmobile for 1938. Please send me, in confidence and without obligation on my part, complete information on Oldsmobile's 1938 Cars, Sales Plans and Franchise.

Name \_\_\_\_\_  
Business \_\_\_\_\_  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

# STEP AHEAD WITH OLDSMOBILE

## HANG UP A RECORD YEAR

## Record Breaking Automotive Service Industries Show



**G. N. Lockridge**  
President, Motor & Equipment  
Wholesalers Association



**L. F. Hunderup**  
President, National Standard  
Parts Association



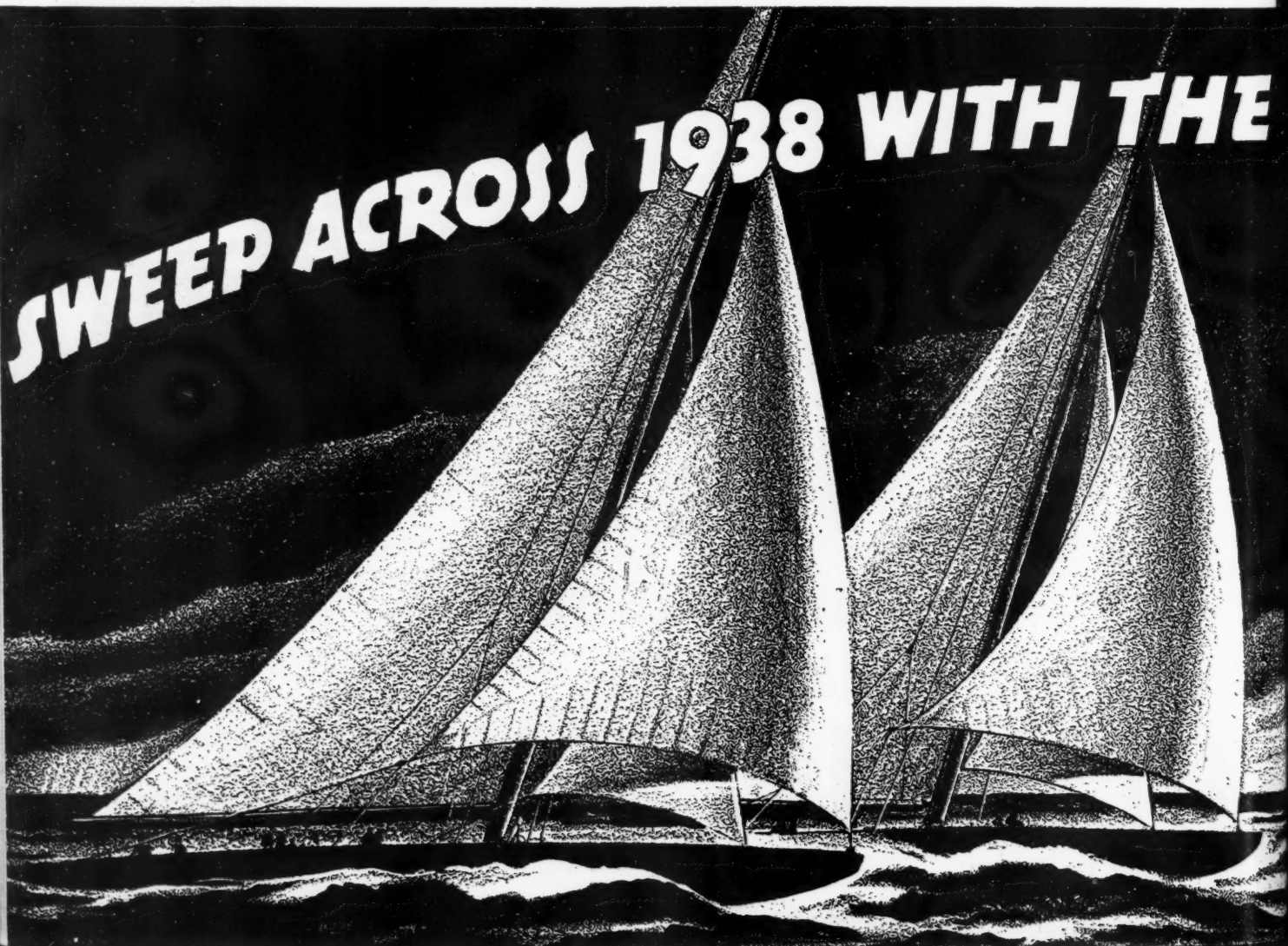
**B. G. Close**  
President, Motor & Equipment  
Manufacturers Association

With 371 exhibitors occupying 996 booths and covering 110,000 sq. ft. of floor space, the A.S.I. Show, opening at Navy Pier, Chicago, on Monday, December 6, is expected to surpass any previous exhibit and bring the largest attendance ever known at one of these expositions.

So great has been the demand for space that Mayor Edward Kelly, of Chicago, was prevailed upon to condition an 800-foot stretch in the South Section at Navy Pier, never before used, making 145 more display units. The A.S.I. Show is a six-day show this year, opening Monday, December 6, and closing Saturday, December 11.

It is jointly sponsored by the M.E.W.A., M.E.M.A. and the N.S.P.A. Members of these associations and overseas guests, approved by the Joint Operating Committee, will be admitted for the full period, while invited jobber guests will be admitted the final three days. Thursday, Friday and Saturday.

# SWEEP ACROSS 1938 WITH THE F

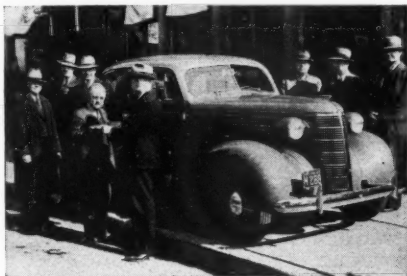




## Winner of Permite Contest Announced

Ray Palmer, 57-year-old automotive mechanic at the Frank Vonderschmitt Garage, Washington, Indiana, was awarded first prize in the recent Permite Replacement Parts Contest sponsored by Aluminum Industries, Inc.

As first prize winner, Mr. Palmer was given his choice of several makes of cars and chose the 1938 Chevrolet deluxe 2-door sedan.



Formal presentation of the car was made by William H. Kennedy, Mayor pro tem of Washington, in the presence of Bruce V. Keller, Contest and Advertising Manager, and L. C. McCaskill, District Manager, of Aluminum Industries, Inc., Cincinnati; John L. Hayes and Ben Ritter of the Hayes Motor Supply Co., Permite distributor of Washington, and James Bryant and L. W. Keith of the Chevrolet Sales Agency of Washington.

Mr. Palmer has been in the auto-

motive repair business for 35 years, during 25 of which he conducted his own business. For the past 10 years, he has been employed by the Frank Vonderschmitt Garage.

One hundred and ninety-nine cash prizes were also awarded, second prize going to Kenneth McEathron of Cody, Wyoming, and third prize to P. R. June of Baton Rouge, La. In addition, seven Permite Jobbers' salesmen received cash awards.

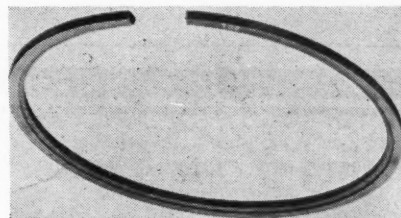
The judges, A. H. Packer, Editor Motor Service Magazine; A. L. Dyke, Editor Dyke's Automobile Engine Encyclopedia, and R. F. Kuns, Principal Cincinnati Automotive Vocational School, "had their hands full" at judging time because of the unusually large number of entries received from every one of the 48 states and all the provinces in Canada.

## Blue Ribbon Coils

The Manhattan Insulated Wire Co., 3602 Thirty-fifth Ave., Long Island City, N. Y., has announced a new line of Blue Ribbon Super Speed Coils. The windings used in the construction of these coils are said to be larger than those used in the average coil and the primary and secondary windings are so evenly balanced and perfectly matched that high speed performance is assured. They are carefully inspected and tested at various stages of their manufacture, and the manufacturer states that they are practically custom built.

## Perfect Circle Announces New Ring

Two major improvements have been announced by the Perfect Circle Co., Hagerstown, Ind. The first is a new treatment of the outer surface of rings which converts the raw cast iron surface into black magnetic oxide, a polishing agent said to be finer than jeweler's rouge. Rings so treated are known as FerroX Surfaced rings. This polishing surface polishes the rings and cylinder walls to a high finish and permits the rings to seat during the first few hours of running. This greatly reduces wear and decreases gas and oil consumption.



The second major improvement is the development of a new compression ring for the top ring groove. A new design principle, including a step-cut groove on the inner edge of the top surface, equally distributes the pressure over the full face area, while positive contact of the lower corner of the ring with the cylinder wall results in maximum oil economy and quick seating.

# THE FASTEST GROWING LINE



Grey-Rock is sweeping across America in a rising tide of sales. Dealers are being pulled irresistibly by its popularity, lifted higher by its sales. This ever-increasing surge of Grey-Rock business pushes us into 1938 more than ever "the fastest growing line."

We believe it will pay you to investigate the tremendous forces behind Grey-Rock sales . . . to put them behind your brake business. Every Grey-Rock jobber has the story of Grey-Rock Balanced Braksets which give 1938, new-car brake-action to older model cars. He can give you the latest Grey-

## Grey-Rock

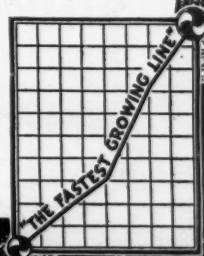
### BALANCED BRAKSETS

Rock instructions and trouble shooting information which make every competent mechanic an expert on all types of brake. He is now ready with advertising helps which will bring you more brake customers.

Talk to your Grey-Rock jobber. He can show you the Grey-Rock method of balancing passenger car and fleet brakes which ends mistakes, protects workmanship and justifies worthwhile profits. Put this tremendous force behind your business and "Sweep Across 1938 With Grey-Rock 'The Fastest Growing Line'".

UNITED STATES ASBESTOS DIVISION of Raybestos-Manhattan, Inc.,  
MANHEIM, PA.

BRAKE LININGS • CLUTCH FACINGS • FAN BELTS • HOSE • PACKINGS • RELINING EQUIPMENT



## UAW Picking Up "Loose Ends"

The political organization set up by the United Automobile Workers Union to campaign for CIO candidates in the recent Detroit election is to be utilized in conducting the Ford union membership drive. Plan is to keep the organization intact and active until the next election in the city when the union forces again will enter the political arena. Far from being discouraged by their late defeat, union leaders point out that the vote for their mayoralty candidate exceeded the vote received heretofore by any mayor in Detroit, save one.

Plans to further the UAW drive to

organize Ford workers in the U. S. and Canada were to be considered at a meeting of delegates from plants in both countries, Nov. 13.

The first post-election labor trouble in an automobile plant occurred at Hudson Motors, Nov. 9, when UAW members in the paint shop, objecting to the lay off of eight union employees, refused to continue work. The management was forced to close the entire plant for the day. Conferences with union representatives resulted in the resumption of work the morning of Nov. 10 while the company carried on time studies in the paint depart-

ment. The men laid off were not returned. The company maintains the department was overstaffed and that time studies will show that 12 men should have been laid off instead of eight.

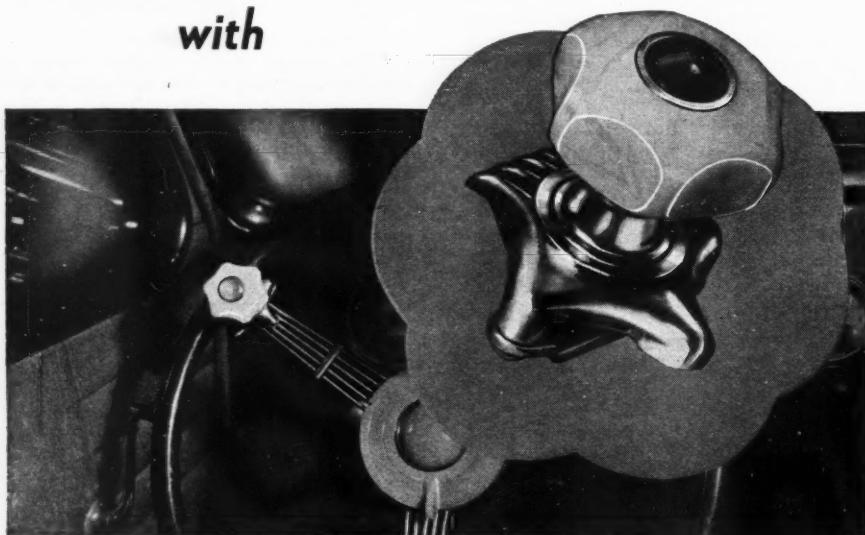
Plant No. 2 of the Bohn Aluminum & Brass Corp. was closed on the afternoon of Nov. 9 when the day shift protested against hiring of five new employees after 20 workers had been laid off. It was the sixth time this year that strikers had closed a unit of the Bohn company, which has an agreement with the UAW signed March 24. Company officials declared that the dispute resulted from a misunderstanding of provisions of the new state occupational disease law. The employment status of about 20 men is involved.

Union members are also said to be getting more and more restless over the inactivity of leaders in connection with the Ford drive. It was the subject of heated discussion at a Nov. 6 meeting of the district council which represents locals in the Detroit area. Some unionists profess to see a connection between the failure to conduct an aggressive Ford drive and the lack of progress in GM negotiations, reasoning that the corporation would be more likely to yield on certain points if its chief competitor were subject to the same regulations. The \$1 special assessment upon all UAW members to finance the Ford campaign has been made payable with the November dues.

The UAW will attempt to enlist the cooperation of all labor groups for future political campaigns. As a preliminary step, a conference of all labor unions has been called for Dec. 12 to form a non-partisan labor league for Detroit and lay the groundwork for a state labor non-partisan league. The meeting was called by Alan Strachan, who was chairman of the UAW Political Action Committee in the recent municipal campaign. All locals in the labor movement of the city are being invited to send representatives to the conference, including independent unions and AFL affiliates as well as the UAW and other CIO organizations.

As an aftermath to the election, the Detroit and Wayne County Federation of Labor is taking steps to expel from its membership those delegates who ignored the federation's recommendations in the election and supported Patrick H. O'Brien and the CIO slate. Action would be directed against rebels who called a second convention to back O'Brien after the federation officially had indorsed Richard W. Reading for mayor, and candidates for council.

## Bring Your Customers' Cars Up-to-date with



## Sinko SPIN-UR-WHEEL BEZ-L-BALL

Sell owners this attractive new aid to parking, backing and turning. Spin-Ur-Wheel will give their cars new driving charm and yourself a neat profit on each deal.

Spin-Ur-Wheel is instantly attachable to any steering wheel. It is available in six popular colors, with novelty crystal insert in both fluted oval and pear-shaped styles, and with chrome or enamel base.



Every Spin-Ur-Wheel customer will want to top off the job by outfitting his gear lever with the beautiful Bez-L-Ball in matching colors and designs.



**SINKO TOOL & MFG. COMPANY**  
351-371 N. Crawford Avenue CHICAGO, ILL.

## Vellumoid Exhibit at A.S.I. Show

At the A.S.I. Show in Chicago the Vellumoid Co., Worcester, Mass., is exhibiting their latest stocking system for carrying small and large gaskets. The system consists essentially of uniform numbering and for smaller gaskets a drawer file using uniform size envelopes.



## Continued Expansion in Motor Truck Business Indicated in A.M.A. Publication

Evidence of the increasing importance of motor truck transportation to agriculture and industry, and as an employer of labor is indicated in the 1937 edition of "Motor Truck Facts" released by the Motor Truck Committee of the Automobile Manufacturers Association.

"That motor truck transportation is as indispensable to public welfare as any other public agency, is found in the production, use and employ-

ment figures contained in this booklet," declared Arthur C. Butler, secretary of the Motor Truck Committee.

"Registrations of motor trucks have reached a new high of 4,023,606 vehicles, and these units employ over 3,000,000 men delivering essentials from production plants to the door of the consumer. In addition to the drivers, scores of thousands of workers are employed in the construction and maintenance of the vehicles and

in the accessorial lines of the business.

"Nearly 100 per cent of the milk is moved into the majority of leading cities in motor truck units. Where less than 2 per cent of the livestock was transported by motor trucks in 1916, now approximately 54 per cent is brought into the leading markets over the highways. The annual tax bill of motor truck owners, excluding that which is paid in personal property taxes on trucks in operation, income and property taxes on garages, terminals, repair shops, and trucking companies, totals \$383,563,000, an amount which would build 10,000 miles of first class roads."

### G.M. Traffic Association Formed

For the purpose of establishing more uniform policies and practices with respect to the movement of freight and the more ready exchange of helpful information between divisions of the corporation, the General Motors Traffic Association has been formed. Traffic managers of the various General Motors Divisions throughout the United States will be members of the Association. C. R. Scharff, traffic director of the Chevrolet division, has been appointed chairman. Leo Shaw, formerly traffic manager of the Linden division of General Motors, has been appointed secretary of the Association, with headquarters in Detroit.

### THE PARTS YOU NEED TO DO THE JOB

(Continued from page 21)

Parts, Fuel Pump	Sandpaper
Parts, Generator	Screws, Cap and Set
Parts, Starting Motor Drive	Screws, Machine
Parts, Storage Battery	Seats, Valve
Parts, Water Pump	Shackles, Spring
Parts, Windshield Cleaner	Shafts, Propeller
Paste, Gasket Making	Shafts, Rear Axle
Patches, Top Repair	Shafts, Water Pump
Pedals, Accelerator	Shims
Pins, Cotter	Shims, Axle
Pins, Hinge	Shims, Brake
Pins, Piston	Lining
Pipes, Tail	Shock Absorbers
Pistons	Shoes, Brake
Plates, Clutch	Signals, Direction
Plates, Kick or Scuff	Indicating
Plugs, Expansion	Silencers
Plugs, Spark	Carburetor
Plugs, Tire Repair	Intake
Points, Contact	Sleeves, Cylinder
Pumps, Oil	Sockets, Electric
Circulating	Lamp
Purifiers, Oil	Solder
Racks, Trunk	Speedometers
Radiators, Engine	Springs, Leaf
Cooling	and Coil
Radio Sets, Automobile	Starters, Motor
Reflectors, Safety	Strips, Windshield and Window
Regulators, Carburetor	Weather Supports, Brake
Removers, Paint	Rod
Resins, Synthetic	Switches, Headlight
Rests, Arm	Dimming
Rests, Heel	Switches, Ignition
Rests or Rails, Foot	Switches, Rear
Retainers, Valve	Signal
Spring	Switches, Starter
Rings, Piston	Tape, Insulating
Rings, Wire Wheel	and Tire
Rings and Seals, Oil and Grease	Tape, Masking
Retaining	Terminals, Storage
Rivets, Brake	Battery
Lining	Terminals, Wire
Rods, Connecting	Tires and Tubes
Rotors, Distributor	Traffic Signals
	Trunks
	Tubing
	Valve Insides (Tire)
	Valves, Engine
	Poppet
	Washers, Felt,
	Steel, Lock
	Weights, Wheel
	Balancing

**TURN Testing**  
**into QUICK PROFITS**  
**with a NIEHOFF Certified**  
**"COILOMETER"**

**ANALYZES COILS**  
**UNDER ALL CONDITIONS**  
**Try THIS ON YOUR NEXT**  
**CUSTOMER AND WATCH**  
**SALES Boom! on COILS**  
**CONDENSERS • POINTS**  
**CAPS • PLUGS • ROTORS**



**MAKES** testing of any coil rapid and easy. Faulty condensers, incorrect plugs, leaky ignition cables, cracked caps and rotor troubles are quickly detected. Car owners can see at a glance what is wrong and will suggest new replacement parts.

A super silent salesman—always on duty—whose streamlined two-tone anodized aluminum panel sparkles with inviting sales appeal. It is Certified and precision made—the Finest Equipment on the Market—to help you sell replacement parts and service, create a faster turnover and ring up extra profits. Remember that it operates from car battery or any six volt battery. Can be hung on radiator tie rod in full vision of customer. Ask your Jobber for this new precision Testing Equipment TODAY! If he can't supply you write, wire, or phone and we'll gladly mail you our new Catalog in colors with latest price list.

### READ THESE FEATURES THAT PRODUCE SALES

- ★ Tests coils on or off the car. Three speeds show coil performance under all conditions.
- ★ Accurately indicates dead short draw of coil and draw at operating speeds. Pre-heats coils if desired.
- ★ Geissler tube quickly detects coil missing at high speed.
- ★ Coil output is indicated in millimeters on large meter dial which records adjustable spark gap.
- ★ Tests condensers on or off the car and shows action of condenser under test on coil output and breaker points.
- ★ Tests cables, spark plugs, caps and rotors while motor is running.

BRANCH: 1342 So. Flower, Los Angeles, Calif.



**C. E. NIEHOFF & CO.**

230 W. SUPERIOR ST. CHICAGO, ILLINOIS

★ **ENGINEERED FOR ACCURATE PERFORMANCE**  
AND **DEPENDABILITY** ★

## Automatic Transmission

(Continued from page 23)

pin. Then lift the throttle rod up above the lever and install the pin in the clevis. Drop the rod down on the lever, and the clevis pin should just rub the rear face of the lug on the upper end of the lever.

If the throttle adjustments are correct, a slight resistance will be felt in the accelerator pedal when wide-open carburetor throttle position is reached, and before the accelerator pedal is down to the floor. Additional pressure on the accelerator pedal will

overcome this resistance, and the pedal will go down to the floor, indicating that the shift from fourth down to third has been made.

Impurities in the oil are perhaps the worst enemies of the successful operation of the automatic transmission, and in the case of faulty operation, that is the first place to look for trouble. The oil pressure regulator valve and spring may be removed for cleaning without removing the transmission from the car. (See Fig. 3.) The valve itself has to be picked out with a tool having clamping jaws in the end. When reinstalling the valve, do not drop it in place, but set it in carefully with the tool.

The adjustment of the servo bands

can be made without removing the transmission from the car, and should be done at about every 10,000 mile intervals. If they are allowed to become loose there will be a noticeable slipping when gears are changed, and it will be particularly noticeable in fourth speed.

In the absence of the special gage supplied for checking the band adjustment, the operation can be performed as follows: remove the transmission oil pan after draining off the oil, and check the servo plunger rod shown in Fig. 4 (the checking gage is resting on the plunger, so that it does not show clearly in this illustration). The rod should extend out from the housing of the servo unit for a distance of 7/16 in. This can be checked with a small steel scale. If it extends greater than this distance, the band should be adjusted. To make this adjustment, first force the plunger into the servo unit so that it extends less than 1/8 in. from the housing, and with it held in this position, loosen the servo band adjusting screw jamb nut (Fig. 2) and tighten down the adjusting screw to take out the slack. Then release the plunger, and back off the adjusting screw until the plunger extends out of the housing not more than 7/16 in. or less than 1/8 in. Tighten the jamb nut.

The governor within the transmission controls the up-shifts and down-shifts that effect the front planetary. In other words, the governor makes it possible for the shifts to take place at the proper car speeds. The governor unit should never be disassembled, but it can be adjusted. It is necessary to remove the side cover of the transmission by first loosening the clamp bolts of the throttle control lever and the rear unit cam operating lever, and prying the levers off their shafts. It is not necessary to disconnect the rods, as the levers can be removed with the rods attached. Do not remove the forward and reverse shifting lever.

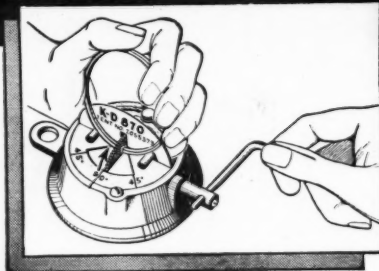
Pry open the lock fingers under the outer lock nut on the governor shaft, and with a wrench holding the inner nut, turn the shaft with a screw driver in a clockwise direction, or in (Fig. 5) until a light click is heard, indicating that the front unit valve has opened. Then turn the screw out slowly until the valve clicks again, indicating that it has closed. Continue to turn the screw out for nearly a full turn after the closing click is heard. This will place the governor in approximately correct adjustment.

When reinstalling the side cover plate and the levers, it is advisable to recheck the linkage as explained earlier in this article to be sure that they are properly adjusted.

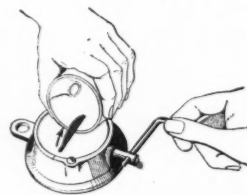
The oil used in this transmission is the same as that used in the engine, and should be changed to summer and winter viscosity, just the same as the oil in the engine is changed. In addition, the transmission oil should be drained off every 10,000 miles, and then the unit should be refilled. The transmission holds 3 quarts of oil for a refill, or 3 1/2 quarts if the low pan is removed and washed out. There is a metal plate in the floorboard directly over the transmission, which, when removed, will uncover a dip-stick in the top of the unit with which to measure the depth of the oil.

## FIT RINGS BETTER IN HALF THE TIME!

▼ Careful Piston Ring Fitting is now quick and easy! The K-D No. 870 Piston Ring Filer is one of the cleverest, most useful tools that ever came into the repair shop. With it, you can fit rings quickly and accurately and overcome to a large extent ring distortion, engine overheating from piston drag, scored cylinders and other troubles arising from poorly fitted rings. This tool files both ends of the ring at the same time and files them square and parallel because in the filing operation the ring is held squarely against the vertical guide plate, as shown in the illustration above. Guide plate is adjustable for step-cut, angle-cut and square-cut rings of any make or size. No chance of error. Each turn of the handle produces a 6-inch continuous cutting stroke, always parallel. Filer has convenient bracket for mounting on one of the cylinder head studs or can be held in a bench-vise, making its operation simple and efficient.



▼ AS A HACK SAW. Saw teeth on the edge of the Cutter-File allow it to be used effectively as a rotary Hack Saw for such jobs as slotting pistons and the like. Produces a faster, better job than can be obtained with the conventional type hack saw because cutting teeth move in only one direction. The Cutter-File itself is made of the finest material and tested for correct hardness. It will give long service and can be replaced easily when worn out. The K-D No. 870 complete with one No. 872 Cutter-File, is packed in individual carton with complete operating instructions. Net weight 2 lbs. 13 oz. List Price \$4.55. Ask your jobber for dealer's net price.



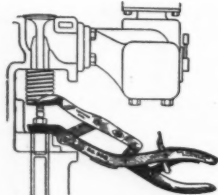
### No. 600 Lifter with Adjustable Parallel Jaws



Serves practically all L-head motors, early models. A heavy duty tool with offset jaws to work back of motor housing. Only 10 inches long. Works quickly and positively even in unusually cramped quarters. Handsome rust-proof Udylite finish. List Price each \$2.50. Ask your jobber for dealer's net price.

### No. 380 Valve Spring Compressor

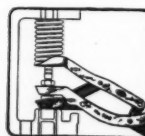
Valve Spring Compressor for "L" Head and "Valve-in-Head" Motors. A fast operating tool adapted to general garage use. Equipped with automatic lock and furnished with extra pair Straight Jaws. Inside dimensions 10" x 10 1/4". Tool made of heavy gauge bar steel. Rust-proofed. Jaws hardened in oil. List price \$8.10. Ask your jobber for dealer's net price.



No. 900 in position on a Plymouth 1936 Motor. Note generous working space and clear view of valve.

### No. 900 "Hi-Offset" Parallel Jaw Valve Lifter. Total Lift 3"—Length 8 3/4"

This new K-D Tool is the fastest valve lifter for many makes of cars, including all models from 1935 of Chrysler, DeSoto, Dodge, Plymouth, Oldsmobile, Packard, Pontiac, Studebaker, Hudson, Terraplane, and others. The unusually "Hi-Offset" Jaws permit operation on these motors without removing the manifold. Unobstructed vision above Lifter makes the handling of keepers faster and easier. Auxiliary jaws furnish 1/2" extra lift when necessary. Net weight 1 lb. List price each \$2.00. Ask your jobber for dealer's net price.



Auxiliary jaws swing into position for motors with unusual clearance between tappet housing and valve spring washer.

# K-D MANUFACTURING CO.

Lancaster, Penna., U. S. A.





**Tiny Racer** Miss Lorain Dunn, seated in a special Bantam racer, powered by two 4-cylinder motors, giving it V-8 efficiency, 50 horsepower, and a speed of 120 m.p.h., at 30 miles per gallon. It was displayed at the Chicago Auto Show.

### Carter Vacumeter Carburetor

A tapered or stepped metering rod has been used in Carter carburetor for a considerable number of years. In earlier models this metering rod was positively connected to the throttle, so that for any given throttle setting it occupied a definite piston in the metering jet, and this determined the rate of fuel delivery for that particular throttle setting.

In the new Vacumeter model the position of the metering rod is still under the control of the throttle in normal operation. With the throttle in any particular position and the engine operating a steady speed, a pin engages the vacuum-and-metering-rod assembly and holds it in a position which assures the delivery of a maximum-economy mixture for that particular operating condition. If now the throttle is suddenly opened for quick acceleration, the vacuum increases greatly, and an actuating spring under the piston then moves the metering rod so that a smaller step enters the jet and the effective jet area is increased. The rate of fuel flow is then increased, and a rich "power mixture" is obtained, as required for rapid acceleration. When acceleration ceases the vacuum-and-rod assembly returns to its position against the pin, and the carburetor then delivers an economy mixture for whatever position the throttle may now be in.

It will be seen from the foregoing that the new feature of the Carter is what is generally referred to as an economizer feature. An advantage claimed for it is that it works without lag in supplying a rich mixture for acceleration, there being no auxiliary jets to fill before the effect becomes noticeable.

### Hebrand Tool Catalog

The Hebrand Corp., Fremont, Ohio, has recently issued a new illustrated booklet covering their complete line of tools. The primary purpose of the booklet is to acquaint mechanics with the completeness of the "Van-Chrome" line of quality tools and to stimulate business for the jobber.

### Neoprene on 1938 Cars

Neoprene, a chloroprene rubber produced by E. I. du Pont de Nemours & Co., has been used on a number of the 1938 automobiles. Among the many applications of the material is its use as a bumper on the front wheel lower spring seat on the new Chrysler models, an application which utilizes both the vibration-dampening and oil-resisting properties of neoprene.

On the '38 Studebaker, the gear shift bumper is neoprene. Dust and oil seals of this material are used on the Graham, Willys, Chevrolet, Pontiac, Cadillac-LaSalle, G. M. truck, and Chrysler-DeSoto.

### The Improved



*A faster  
better job  
at lower  
Shop cost*

## EIS HYDRAULIC BRAKE CYLINDER HONE

If you are still wasting time and energy with an outmoded hone—whether of the adjustable or non-adjustable type—you'll find it a highly practical economy to discard it and get an up-to-date Eis Hone on the job in its place.

The abnormally long "stone life" of Eis Hones, and the speed with which a job can be done, quickly compensate for the cost of a new tool.

Eis Hones take care of all straight and stepbore hydraulic brake cylinders. The flexible cable driver makes it possible to hone wheel cylinder on car.

Easy stone adjustment, from lightest tension for polishing to the hardest tension for quick grinding. Stones quickly and easily changed.

**COMPLETE HONE SETS**—Bore range of  $\frac{3}{4}$ " to 2".

**POPULAR SIZE SET**—From below 1" to  $1\frac{1}{2}$ ", with fine and coarse stones, \$10.00.

Detailed complete honing instructions furnished **FREE** with each set.

From your Jobber or write us for full particulars

### A NEW CABLE MAKE-UP SET

Enables you to make up practically any item (with the exception of a few ultra popular numbers) from universal parts—all types of cables.

Does away with the necessity of carrying a "topheavy" stock—or getting stock on service for emergency jobs.

**BE SURE TO ASK YOUR JOBBER TO  
SHOW YOU THIS LABOR SAVING  
SET—IT'S A HUMDINGER!**



**EIS MANUFACTURING CO., Inc.**  
1365 Jerome Ave., New York City

*This advertisement also appears in Motor World Wholesale*

## Service Trend on 1938 Cars

(Continued from page 19)

banks of cylinders are at an angle of 135 deg. It has dual accessories throughout—two air cleaners, two carburetors, two ignition units, two water pumps, etc. Incidentally, the 12 cylinder engine has been discontinued.

Of interest also are the new pistons in the Buick engines. The heads of the pistons are profiled, as shown in the illustration, and give increased turbulence to the charge. This, in

turn, permits higher compression ratios and increased power.

There are also a number of detailed changes in carburetion tending to produce smoother operation and increased power. On Pontiac an additional jet has been introduced to eliminate a flat spot where the main jet takes over the work from the idling jet. Buick has changed the design of the idling jet.

To secure increased smoothness of engagement and longer life, Chevrolet has introduced a new clutch which makes use of a single diaphragm type spring instead of nine coil springs. Hudson increased clutch capacity by increasing number of clutch springs.

## Portland Auto

### Show Canceled

In Portland the annual automobile show, scheduled for November 14-21, was canceled because the Central Labor Council warned that pickets parading before three of the city's many automobile agencies would picket the show.

The "Oregonian" editorially declared that refusal of unions dominated by Dave Beck, Seattle labor boss, to forego picketing for the duration of the show "will destroy jobs that may not be recovered" and that "the community suffers as well as the parties directly concerned."

## General Motors

### October Car Sales

October sales of General Motors cars to dealers in the United States and Canada, together with shipments overseas, totalled 166,939 compared with 90,764 in October a year ago. Sales in September were 82,317. Sales for the first ten months of 1937 totalled 1,761,317 compared with 1,606,856 for the same ten months of 1936.

Sales of General Motors cars to consumers in the United States totalled 107,216 in October compared with 44,274 in October a year ago. Sales in September were 88,564. Sales for the first ten months of 1937 totalled 1,387,146 compared with 1,391,189 for the same ten months of 1936.

#### Sales To Consumers In United States

	1937	1936	1935	1934
Jan. ...	92,998	102,034	54,105	23,438
Feb. ...	51,600	96,134	77,297	58,911
Mar. ...	196,095	181,782	126,691	98,174
Apr. ...	198,146	200,117	143,909	106,349
May ...	178,521	194,628	109,051	95,253
June ...	153,866	189,756	137,782	112,847
July ...	163,818	163,459	108,645	101,243
Aug. ...	156,322	133,804	127,346	86,258
Sept. ...	88,564	85,201	66,547	71,648
Oct. ...	107,216	44,274	68,566	69,090

Total Ten Months	1,387,146	1,391,189	1,019,939	823,211
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Nov. ...	155,552	136,859	62,752
Dec. ...	173,472	122,198	41,530

Total ..	1,720,213	1,278,996	927,493
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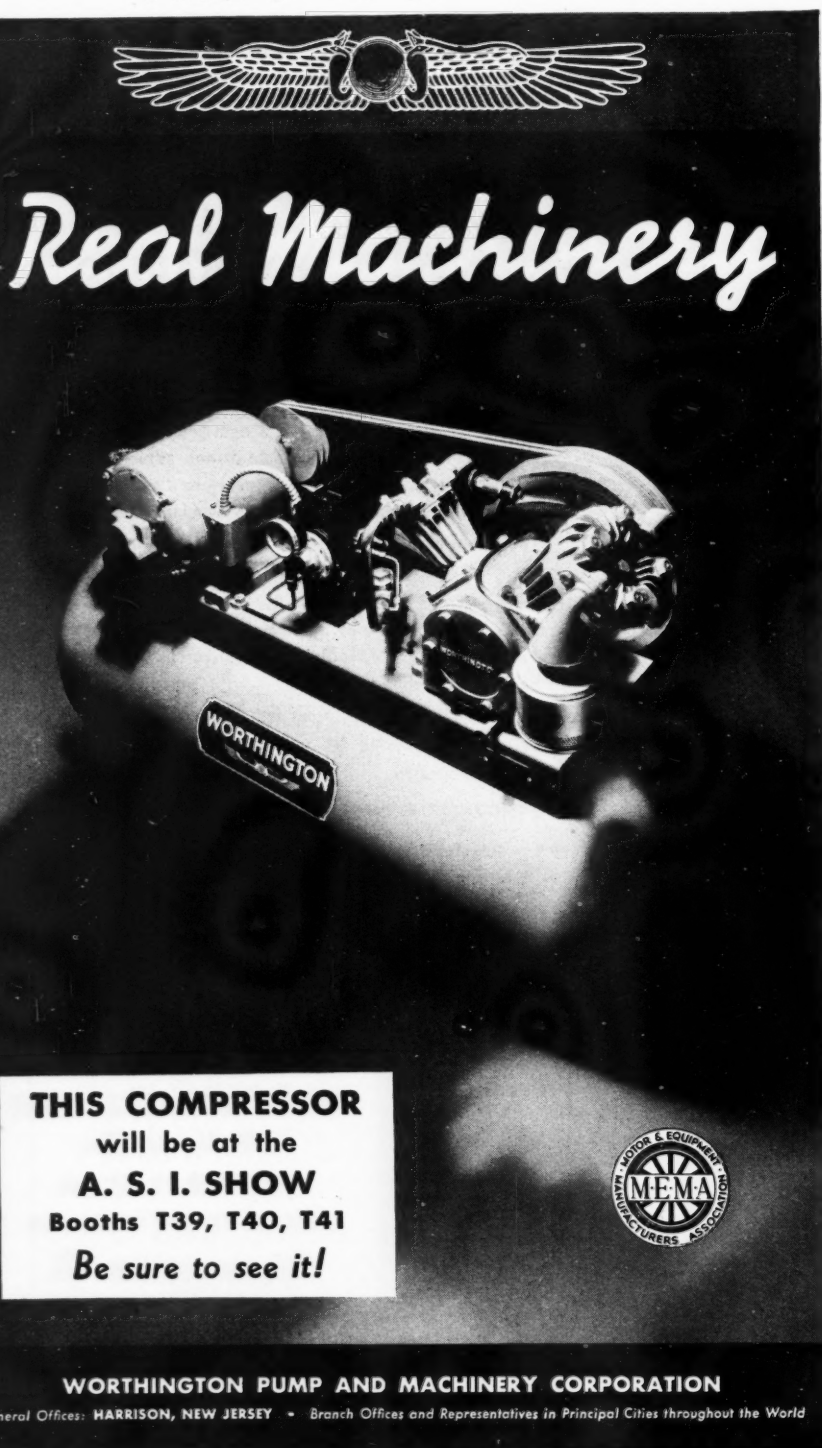
## TROPIC-AIRE Moving

### to New Factory

A modern factory building for Tropic-Aire, Inc., specially designed and built for the efficient production of motor vehicle heaters, defrosters and other automotive accessories, is rapidly nearing completion at 4501 West Augusta Boulevard, Chicago. It will be open for inspection during the A.S.I. Show, week of Dec. 6.

The latest development in production efficiency and economy will be incorporated in an arrangement whereby the materials come in at one end of the building, make a complete circle of the production line and come out in completed form at the other end, after thorough inspection and testing.


Offices will be located on second floor. It is planned to move into the new building about the middle of January.



**Real Machinery**

**THIS COMPRESSOR**  
will be at the  
**A. S. I. SHOW**  
Booths T39, T40, T41  
**Be sure to see it!**

**WORTHINGTON PUMP AND MACHINERY CORPORATION**  
General Offices: HARRISON, NEW JERSEY • Branch Offices and Representatives in Principal Cities throughout the World

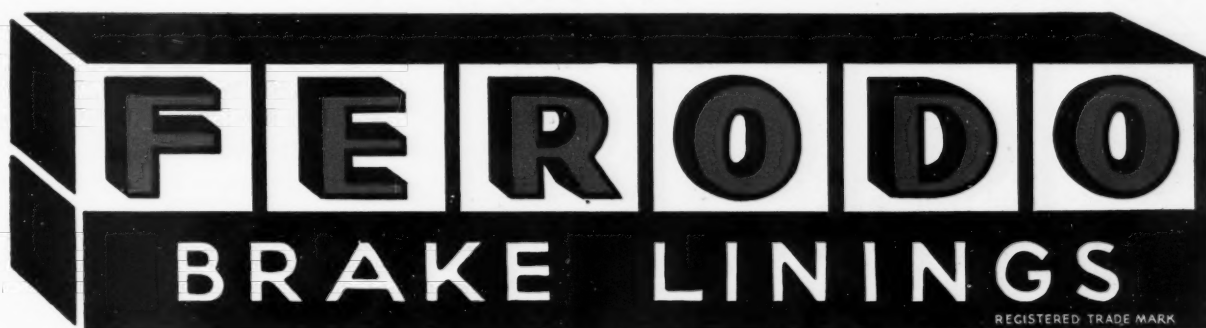




# NEWS



## CONCERNING



**B**EGINNING December 1st, 1937, Ferodo Brake Linings and Clutch Facings will be sold in the automotive field by Ferodo and Asbestos Incorporated, New Brunswick, New Jersey. In the past, Ferodo Brake Linings and Clutch Facings have been distributed through Keasbey & Mattison Company.

In the case of both Companies the change is made because we can both render better service to our valued customers by devoting our activities to the sale of our own products. The sales and engineering staff with which you are familiar will be a part of the Ferodo Organization.

**KEASBEY & MATTISON COMPANY, Ambler, Penna.**  
MANUFACTURERS OF ASBESTOS AND MAGNESIA PRODUCTS

**FERODO and ASBESTOS Incorporated, New Brunswick, N. J.**  
MANUFACTURERS OF FRICTION MATERIALS

## New N. S. P. A. Members

Fifteen applicants for membership in the National Standard Parts Association were admitted at the Membership and Executive Committee Meeting in Detroit, on Monday, Nov. 15.

Among the 15 who were approved was one wholesaler from Canada.

This list of companies who were awarded the N. S. P. A. emblem and privileges follows, with the names of the official delegates at the annual convention and in association affairs:

Wholesalers: Auto Electric Shop, Inc., Pontiac, Mich., B. R. Winborn, D. & N. Auto Parts Co., Greenwood, Miss., W. P. Manscoe; Driggs Auto

Parts Company, Cambridge, Ohio, John H. Stearns; McLean Supply Company, Laurinburg, N. C., F. C. McLean; Motor and Electric Supply Company, Inc., Bowling Green, Ky., J. A. Byrant; Reliable Motor Parts Company, Beaver Falls, Pa., Harry Ganelin; Savage Auto Supply Company, Hamilton, Ohio, Art G. Savage; Shores Brothers, McCook, Neb., W. A. Shores.

Canadian Associate Wholesaler: Wilfrid Ouellet, Bic, Rimouski County, P. Q., Wilfrid Ouellet.

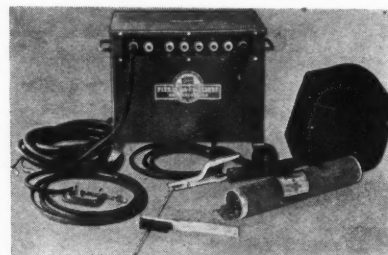
Manufacturers: The Dushane Company, Inc., Detroit, Mich., O. Wilton Carman; Electro Products Company, New York, N. Y., P. O. Stewart;

Ferodo and Asbestos, Inc., New Brunswick, N. J., W. D. Dodge, Jr.; Quincy Compressor Company, Quincy, Ill., J. T. Conder; The Shaler Company, Waupun, Wis., W. S. Coles; J. W. Speaker Corporation, Milwaukee, Wis., J. W. Speaker.

## Westinghouse Has

### New Welder

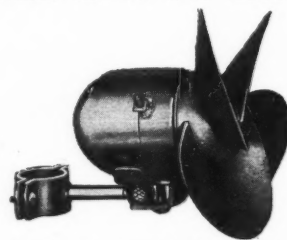
The Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has announced a new, low cost arc welder known as the Midget Marvel. It comprises a special transformer and control designed for alternating current arc welding. The new set has unusually high operating efficiency. It is equipped with handles and four large, hard rubber swivel casters,



making it easily portable. Complete accessories are included with each set, and consist of welding lead with holder and current adjusting plug attached, ground lead with handy "C" clamp, helmet, wire brush, liberal supply of Crevice Weld electrodes and primary lead. The 60 cycle model complete with all accessories is listed at \$123.50, and the 50 cycle model is \$134.50.

## Autofan Improved

The Samson-United Corporation, Rochester, N. Y., has announced a greatly improved electric auto fan for their 1938 model. This is the fan that is furnished with rubber blades and which can be used either as a

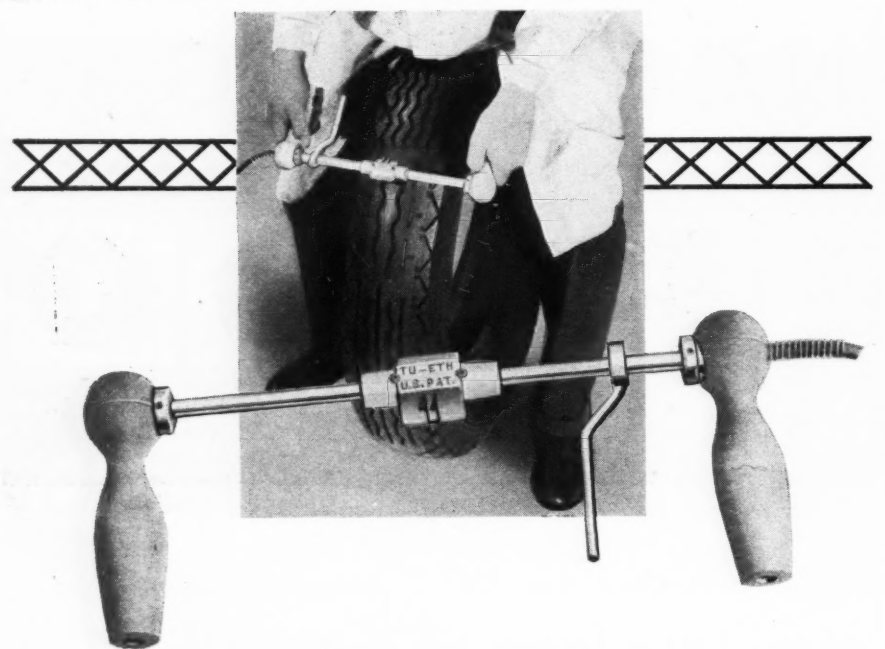


defrosting or ventilating fan. The outstanding improvement in the 1938 model is the development of a 2-speed switch which gives better control of the fan action. The new price is \$3.98.

## Sure-Rite Products

### Re-style Containers

New, modernized packages have been designed for Sure-Plate, the headlight reflector re-silvering kit, and for Sure-Plate, the liquid solder for repairing cracked cylinder blocks. These new, re-styled cartons will be displayed at the Sure-Rite Products Company booth at the Chicago A.S.I. Show, booth No. 498. Maker, Sure-Rite Products Co., Andrews and Cedar Park Avenues, Philadelphia, Pa.



## Car Owners Save— You Make Money With TU-ETH Electric Tire Groover

Here is a super-service opportunity that gives you a chance to sell more service—bring more people who have money to spend into your place of business.

## Regroove for Profits

You render your customers a valuable service—save them money—make their tires give longer safe mileage—and you pocket the cash. It's worth investigating.

The TU-ETH Regroover is adjustable for all size tires. Operates with tire inflated or uninflated—on (if sufficient fender clearance) or off the vehicle.

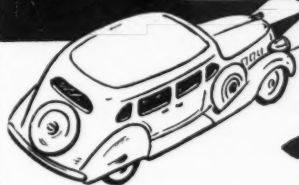
Start selling this profitable service at once. Ask your jobber for complete details; or write us giving your jobber's name.

## VANDERBILT-OSBORNE CORPORATION

Raymond-Commerce Building, Newark, N. J.



# SAFETY



## Lighting

### BY



**35,000 Candle Power\* At Your Service**

**THE MASTER**

**Fog and Adverse Weather Lamp**

**T**HE most powerful and effective fog lamp ever designed . . . the sweeping amber beam thrusts its rays through fog, sleet, snow, rain and dust providing safe, easy driving in adverse weather.

*Write for I.C.C. charts and digest of lighting laws.*

**THE MASTER**

● All chromium . . . 7" lens . . . ready for installation. Pre-focused Mazda bulb. New brackets. Installed in pairs for added safety. Some states permit its use instead of headlamps when coupled to tail lamp.

\*Apparent

**THE K-D LAMP CO., CINCINNATI, OHIO**

## Eyston Sets World Land Speed Record

In covering the measured mile of the 13-mile course mapped over the spacious Bonneville salt bed at an average speed of 311.42 miles per hour Captain Eyston removed from the brow of his fellow countryman the crown Sir Malcolm Campbell had held unchallenged since he established a record of 245.733 miles per hour at Daytona Beach on Feb. 5, 1931. The immediate record which Eyston eclipsed was the 301.1292 miles per hour which, at Bonneville on Sept. 5, 1935, brought Sir Malcolm Campbell's announced retirement from auto speed competition.

To hang up the record, Eyston covered the measured mile in 11.79 seconds for a speed of 305.34 miles per hour, and returned in 11.33 seconds for a speed of 317.74 miles per hour. Officials credited the Englishman with a two-way average of 11.56 seconds for a speed of 311.42 miles per hour.

Eyston added a second record in the run when he covered the lesser one kilometer distance at a two-way average of 312.20 miles per hour. The gait bettered the Campbell record of 276.16 miles per hour established at Daytona Beach, Fla., in 1935, when the now dethroned speed king made his last Florida run prior to removal of the record scene to the remote Bonneville salt bed.

The giant "Thunderbolt," built in London in six months, is described by Captain Eyston as "the craziest automobile ever conceived." Its mammoth proportions shadow the smaller "Bluebird" into which Sir Malcolm Campbell had poured some \$100,000. From its two 12-cylinder motors placed behind the driver seat, to its eight wheels and over-all length of 30 feet, the "Thunderbolt's" seven tons increases in every degree the specifications of the five-ton, single motored and six-wheeled "Bluebird."

Captain Eyston is the third among the English drivers to keep the change of the world speed crown consistently under the British flag since back in 1929—the year that marked conclusion of American supremacy.

The current British regime had its beginning on March 11, 1929, when the late Sir Henry Segrave (then a major, but later knighted because of his speed exploits) boosted the record to 231.362 miles per hour. In that run, he dethroned the late Ray Keech, of Philadelphia, Pa., who had roared over the Daytona sands at 207.552 miles per hour on the previous April 22. Segrave's achievement was somewhat of a counter attack, for Keech had temporarily broken the series of British records in surpassing the 206.956 miles per hour set by Campbell on Feb. 19, 1928.

In out-running the Keech mark, Segrave retrieved the speed crown he

received in 1927 when he was clocked at 203.792 miles per hour over the measured Daytona mile on March 29; a record that ended an American monopoly of some seventeen years at Daytona.

Possibilities of an American bid for the world title ended in tragedy in 1929, when the last of the United States record cars was demolished in the attempt which proved fatal to Lee Bible, a Florida driver.

It was three months after Bible's fatal wreck that American record possibilities ended with Keech's death on the board speedway at Altoona, Pa., on June 15, 1929. Lamenting Bible's tragic wreck, Keech, speaking over the radio just before the start of the championship race, said he "had connections" which assured him of a new record car and that he planned an early attempt to regain the world speed title. Less than two hours later, Keech's car had gone into a crazy spin on the east turn of the board oval and Lady Fate checked his name on racing's honor roll.

In recent years, various announcements have come from many corners of the United States echoing plans for a speed record assault. The most encouraging of these is the hopes of "Ab" Jenkins, competitor of Captain Eyston and John Cobb in distance records at Bonneville. Racing experts are confident that Jenkins soon will realize his ambition to return the record to the United States.

## Block That Kick

(Continued from page 24)

for only one or two makes of cars, and for which calls would be few and far between. However, it is amazing to note that 42 per cent of the country's service spots do not have a special steering gear lubricant, although such a lubricant is specified for almost all cars.

Presented on page 24 is the list of the minimum lubricants, aside from motor oils, which a shop must have in order to service the cars on the road today as specified by their makers. The list includes lubricants for both

summer and winter requirements and is the absolute minimum. Of course, many service departments will find it almost as necessary to include other lubricants, such as special oil for starting motors and generators, graphite sticks, etc.

If the array of lubricants listed here seems large, it should be remembered that modern packaging makes it possible to buy any one of them in small quantities. Purchasing only small amounts of those lubricants for which calls are infrequent will keep stock on hand down, yet puts any lubrication department in a position to service each and every car properly.

The true worth of a properly

equipped lubrication department is apparent to the shop owner who considers its value to his other departments. Everyone will agree that lubrication business, aside from being a profitable item in itself, is one of the best means of contacting customers frequently for the selling of additional repair work and accessories. A customer sold on the fact that he is obtaining conscientious, expert service with each lubrication is a customer half sold when the service man starts talking repairs or accessories.

As more and more of the new cars are coming to depend on proper lubrication for continued good service, more and more car owners are making certain that the man who lubricates their cars follows recommendations. There is no better way for a shop to avoid "kicking" customers and possible loss of business than to prepare itself to handle lubrication business as it should be handled. To do that, the shop must have the proper lubricants to service each make of car as specified by that car's manufacturer.

## A.A.A. Moves Toward Highway Beautification

A weapon in the war against unsightliness along the great American roadside was forged when the Highway Development and Control Committee of the American Automobile Association met recently to complete drafting of a model highway control bill.

Recommendations of the committee as to proper legislation to bring order to the roadside were submitted to the 300 motor club executives from all sections of the country, who met in New York, as guests of the Automobile Club of New York, in the A.A.A.'s 35th annual convention.

"The A.A.A. committee is working for a concerted national, state, and local effort to remove unsightly signs, ramshackle stands, lean-to filling stations, and other eyesores from scenic portions of the landscape and to plan for beautiful, as well as utilitarian highways," a statement from the committee said.

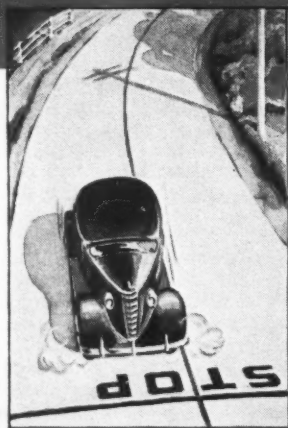
"This plan of ours is not directed at any one thing or any one situation. It involves reasonable control in order that we may reconcile the legitimate interests of commerce with the interests of safety, attractive appearance, and the maintenance for the people of their huge investment in our primary highway system.

## Los Angeles Celebrates Jubilee Show

Because it was the twenty-fifth automobile show sponsored by the Los Angeles Motor Car Dealers' Association, it was celebrated as an elaborate Silver Jubilee.

Symbolic of the occasion, the Pan-Pacific Auditorium was lavishly decorated in a mantle of shimmering silver, the beauty and richness of which was accentuated by a million candle-power of lights.

There were 19 different American makes of cars and the Austin, Fiat and Citroen in the foreign delegation.



## IT'S AMCO!

Likewise no squeal, no chatter, no fading . . . and what's most important—no comebacks. To make sure of that AMCO ran 350,000 miles of road tests last year. Next time you hit a really tough brake job, try AMCO. With a line that's 100% complete AMCO has a made-to-order lining for every kind of brake lining job you'll ever bump into.

ASBESTOS MANUFACTURING COMPANY • HUNTINGTON AND WABASH, INDIANA

**GET BUSY WITH AMCO  
BRAKE LINING AND CLUTCH FACINGS**



## New Director of Sales for Marmon-Herrington

THE appointment of C. Alfred Campbell, nationally known automotive sales, advertising, and sales promotion engineer, to the position of general sales director, was announced by Bert Dingley, vice-president of The Marmon-Herrington Company, Indianapolis, Ind.



C. A. Campbell

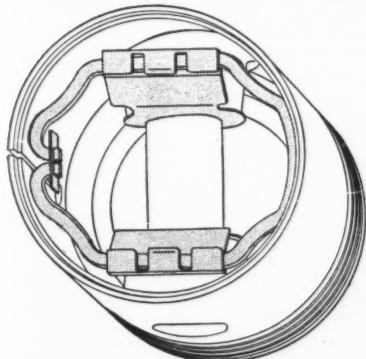
Mr. Campbell, a resident of Indianapolis for many years, has had an extensive business experience—having been associated with several leading companies in the automotive industry, specializing in commercial and industrial transportation units. His broad knowledge and his wide personal acquaintance in the trade undoubtedly will prove a valuable asset to the company which is one of the world's largest manufacturers of all-wheel-drive passenger cars, commercial vehicles and trucks.

As evidence of the growth of the Marmon-Herrington Company's business, announcement was recently made that the company had purchased the entire plant and machinery of Duesenburg Motors, Inc., located on National Road 40, at West Washington and Harding Streets in Indianapolis. The property consists of two large modern factory buildings, and a 16-acre tract of ground, providing ample facilities for further business expansion. The company expects to be in full production at the new plant on Dec. 1.

In addition to its regular line of heavy duty all-wheel-drive trucks and track-laying tractors, the company converts standard Ford passenger cars, commercial vehicles and trucks into all-wheel-drive units, according to Mr. Dingley, and new 1938 models are just now being announced.

## Ramsey Piston Expander

A new piston skirt expander has been announced by the Ramsey Accessories Manufacturing Co., 3693 Forest Park Blvd., St. Louis, Mo. The new expander illustrated fits around



the piston pin and expands the skirt of the piston uniformly at right angles to the piston pin. The list price is \$0.51.

## Fears Traffic Stagnation

There is a "submerged" market in this country for 5,000,000 to 6,000,000 automobiles not bought because prospective owners fear accidents and the inconvenience of traffic congestion, according to Dr. Miller McClintock, director of the Harvard University Bureau for Traffic Research, addressing a safety meeting in New York.

Dr. McClintock warned at the same time that the current rate of increase in automobile and truck use will result within a year or two into practical stagnation of traffic movement on the major routes. He said that with 28,000,000 cars on the roads, the country is in a period of rapidly growing con-

gestion. Dr. McClintock said he felt a result would be a very costly decentralization of urban activities which would, in the long run, bring even more serious traffic problems.

## Sun Tune-Up Catalog

The Sun Mfg. Co., 3012 Clybourn Ave., Chicago, Ill., has recently issued a new catalog covering their motor tune-up equipment. This catalog is printed in color and illustrates the various models of Sun motor analyzers, combustion testers, individual electrical testers and a new portable test kit.



## Flash!

### ONE ITEM SELLS ANOTHER

Uniformity of package design makes each Flash item distinctly a part of this well known, complete chemical line. It's easy to identify Flash products.

Complete satisfaction with any one Flash product fosters confidence in the entire line. Satisfaction is guaranteed by the use of the best chemicals obtainable—painstaking research and perfect formulas.

This is why one Flash item sells another.

### SMART MERCHANDISING

When one item helps sell another—when all items sell and repeat fast—that is the line wise dealers feature. That is why Flash is the feature line of many of America's leading automotive supply dealers. Feature Flash—it will mean more sales, more profits for you.

Flash presents FREE a complete set of brilliant posters in color to help you to bigger, better sales. You may have these in card form or as window hangers. Order them NOW!

## FLASH LABORATORIES

1858 W. Kinzie Street

Chicago, Ill.

### A CHEMICAL for EVERY AUTOMOTIVE NEED!

Gasket Shellac Compound  
Gasket Dope  
Body Polish and Cleaner  
Pre Wax Cleaner  
Wax Polish  
Chromium Cleaner  
Metal Polish  
Radiator Cleaner  
Radiator Cements  
Colloidal Flashoil—"A"  
Colloidal Flashoil—"B"  
Penetrating Oil  
Hydraulic Brake Fluid  
Shock Absorber Fluids  
Knee Action Type Fluid  
One Shot Chassis Oil  
Neatsfoot Oil Compound  
Glass Klean  
Glass Klean Concentrate  
Fabrik Cleaner  
Dry Cleaner  
Tar Remover  
Top Patch Outfit  
Top Putty  
Soldering Paste  
Soldering Liquid  
Clutch Fluid  
Top Dressing—Black, Clear  
Khaki, Aluminum  
Top Patch Cement  
Colored Enamels  
TouchUp Enamel  
Body Enamel  
Engine Enamels  
Chassis Black  
Under Fender Rubberkote  
Tire Coating (Para White)  
Matting Cement  
Rubber Cement  
Iron Cement  
Red Reliner Cement  
Valve Grinding Compound  
(oil or water mix)  
Mechanics Blue  
Tube Repair Kit  
Tread Cut Filler  
Brake Dressing  
Tape: Friction or Rubber  
Bicycle Rim Cement  
Bicycle Tire Fluid  
Handy Oil  
Fire Extinguisher Fluid  
Gasoline Gauge Fluid  
Reflector Polish  
Flake Motor Graphite

**When you visit the A. S. I. Show see the complete Flash exhibit in booths S393-S395.**

## Crowder Heads Van Norman Sales Promotion

Announcement is made by Van Norman Machine Tool Co., Springfield, Mass., of the promotion of Charles R. Crowder to the position of sales promotion manager, with headquarters at the home office. Crowder is moving East from Portland, Ore., and will take up his new duties on Nov. 6.

The Pacific Northwest sales territory relinquished by Crowder will be taken over by Phil Moulton, now in charge of the Philadelphia-Pittsburgh territory.

## Dual Control Cars Provided for Driving Instruction

First of 25 dual control cars for safe driving instruction in high schools were recently completed here by the Pontiac Motor division and turned over to the American Automobile Association who supervise this educational activity in the interest of safer highways.

The cars are all new 1938 model, six-cylinder, four-door touring sedans, each equipped with dual controls so that the car may also be under control of the instructor who rides with each student during practical road instruction in safe driving.

In providing 25 cars for this activity in 1938, Pontiac is doubling the quota of cars made available for this work last year, the first time any automobile company furnished automobiles in quantity for this contribution to safer highways.

## Lubco Corp. Supplies

### Filter Material

The Lubco Corporation of Chicago have made arrangements with the Michiana Products Corporation of Michigan City, Indiana, to furnish Stream-Liner-Duo-Pak for use in Michiana Duo-Flo and H-W Oil Filters. Stream-Liner-Duo-Pak is a filtering material impregnated with Stream-Liner which provides besides filtering, increased motor operating efficiency which increases fuel and oil mileage and reduces friction, sludging, wear, etc.

## 350 Arvin Dealers Banquet Guests of Michigan Jobber

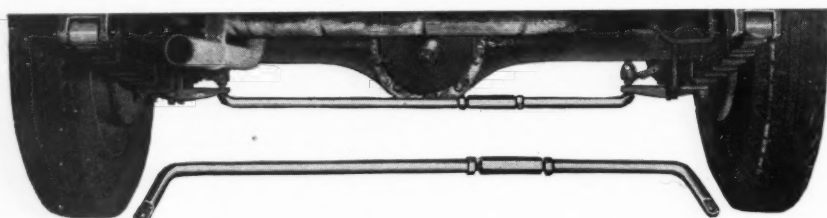
Three hundred and fifty Arvin dealers from 25 Michigan counties were the guests of Sherwood Hall Co., Ltd., Grand Rapids, at a banquet-business meeting held there recently. R. G. Hogan, general manager of the company which has distributed Arvin products for 20 years, acted as toastmaster.

## PROFIT MAKING TOOLS AND EQUIPMENT

(Continued from page 20)

Straighteners, Axle and Frame	Skirt Expanding
Stretchers, Brake Lining	Tools, Rim
Synchronizers, Ignition	Contracting
Tanks, Inner	Tools, Spring
Tube, Testing	Shackle
Tanks, Oil	Tools, Spring
Tanks and Systems, Gasoline and Oil Storage	Spreading
Taps	Tools, Storage
Testers, Brake	Battery Repair
Testers, Electrical	Tools, Stripping
Testers, Engine	Tools, Thread
Testers, Fuel	Restoring
Pump	Tools, Tire
Testers, Gasoline	Tools, Tire
Mileage	Chain Repair
Testers, Headlight	Tools, Valve
Testers, Spark	Grinding
Plug	Tools, Valve
Testers, Spring	Guide Cleaning
Testers, Valve Seat	Tools, Valve
Tools, Body and	Guide Installing
Fender Repair	Tools, Valve Key
Tools, Clutch	Inserting
Alignment	Tools, Valve
Tools, Crank Pin	Lifting
Truing	Tools, Valve Seat
Tools, Cylinder	Refinishing
Ridge Cutting	Tools, Valve Seat
Tools, Piston	Renewing
Fitting	Torches and Furnaces
Tools, Piston	Trucks, Wrecking
Grooving	Turntables,
Tools, Piston Pin	Automobile
Lock Ring	Vises, Machinists'
Grooving	Vises, Piston
Tools, Piston	Voltmeter
Ring Compressing	Vulcanizers
Tools, Piston	Automobile
Ring Groove	Washers,
Cleaning	Automobile
Tools, Piston	(Brushes)
Ring Removing	Welders and
and Installing	Equipment
Tools, Piston	Wheels, Buffing
	and Polishing
	Wheels, Grinding
	Winches, Truck
	Wrenches, all types

# "Sure I Know What It Is and I Know How to Stop It!"



## SPRING SADDLE SILENCERS

*Stop Rumbles caused by  
Chevrolet, Pontiac, Buick Springs*

You're the fair haired boy when your owners come, out of patience with spring rumbles—and you have the answer. It's like getting paid for rolling off a log. Independent repairmen all over the country are taxing our factory with orders.

**One Size Fits All Models**

**A 15 Minute Job—at a Nice Profit**

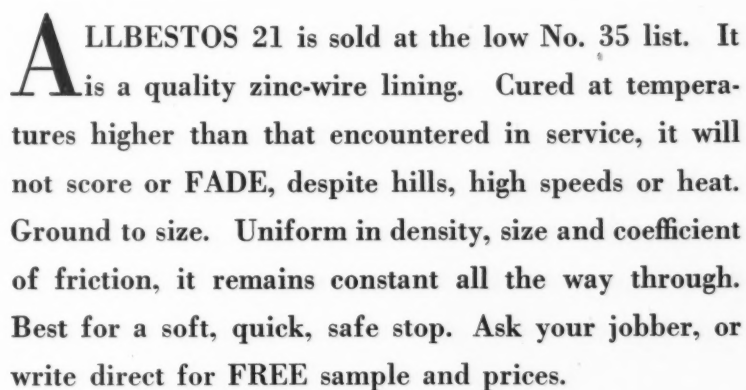
You don't have to carry a lot of stock, or tie up any important money to be ready for any SPRING SADDLE SILENCER job. The results make better friends of your customers—just one more proof that you know what it's all about.

Your regular jobber should have SPRING SADDLE SILENCERS. Ask him. If he isn't supplied at the moment—or if he is and you want any more information from us—write today.

**CURTISS & SMITH MFG. CO.**

**Pottstown, Penna.**





# **Albestos 21** **UNIVERSAL BRAKE LINING**

## Stewart-Warner Buys Marmon Plant

The Stewart-Warner Corp. announced that negotiations for the purchase through a subsidiary of Plant No. 2 of the Marmon Motor Car Co. at Indianapolis, Ind., were in an advanced stage.

By the purchase, Stewart-Warner acquires 22 acres of land, and buildings aggregating 539,000 sq. ft. of floor space, the largest of the three Marmon plants. The sale was made by the liquidating trustees of the Marmon company.

In announcing the negotiations, J. E. Otis, Jr., president of Stewart-Warner, said: "It is our intention to transfer all refrigerator manufacturing operations from Chicago to our new plant in Indianapolis. The plant was acquired at a price far below the cost of erecting similar buildings today."

## Weidenhoff Offers New Distrib-U-Scope



present in the distributor show up

A new distributor testing and synchronizing machine known as the Distrib-U-Scope has been developed by Joseph Weidenhoff, Inc., 4340 W. Roosevelt Road, Chicago, Ill. It is made in three models and is designed to show directly, accurately and instantly every condition of the distributor. Employing red and blue lights operating 180 deg. apart, the conditions

readily and are easily interpreted. Standard equipment includes chuck, adapters, leads, etc., necessary to accommodate all makes of distributors including Ford V-8 and Lincoln Zephyr. Fixture for timing Ford V-8 and Lincoln Zephyr are also included.



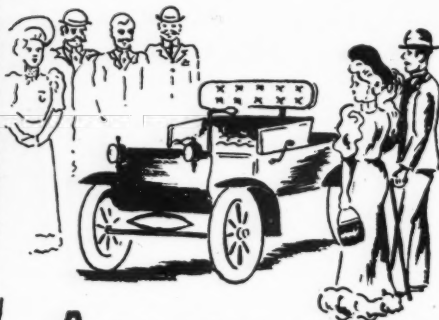
**Three Wheeling Virginia Szucky**, on her tricycle was one of the participants in the Seventh Annual Antique Automobile Derby in Philadelphia.

## IGNITION PARTS ODDITIES



**TUNGSTEN ORE IS "PANED" LIKE GOLD BY CHINESE PEASANTS. ITS PRICE DEPENDS ON WARS, BANDITS, SMUGGLING, ETC. YET OUR PRICES ARE UNIFORM AND LOW.**

**THE TUNGSTEN DISCS ON OUR CONTACT POINTS ARE OF THE CORRECT CRYSTALLINE STRUCTURE FOR LONGEST LIFE IN THE IGNITION SYSTEM.**



**AT THE FIRST AUTOMOBILE SHOW (1901) ALL CARS HAD PLATINUM CONTACTS. IN 1938 ALL ARE TUNGSTEN.**



**TRADE MARK OF THE ONLY ORE-TO-TUNGSTEN MANUFACTURER WHOSE COMPLETE LINE OF QUALITY REPLACEMENT PARTS KEEPS YOU COMPETITIVE. OUR FREE CATALOG HOLDS DOWN YOUR INVENTORY.**

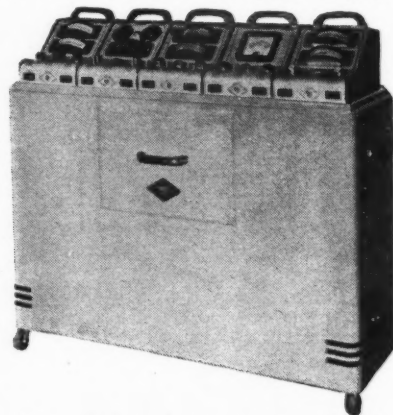
**SEE US AT BOOTH N411 to N415 AT THE SHOW**

**CONTACT OUR SALESMAN FOR THE INSIDE STORY OF TUNGSTEN!**

**TUNGSTEN CONTACT MFG. CO., Inc., North Bergen, N. J.**

## Potter Announces Complete Tester

The Potter Co., 1950 Sheridan Road, North Chicago, Ill., has announced a new engine analyzer the units of which may be purchased individually or collectively with the new cabinet. The units consist of a gas analyzer, coil tester, AVO test set, condenser tester, a combination vacuum and compression gage incorpo-



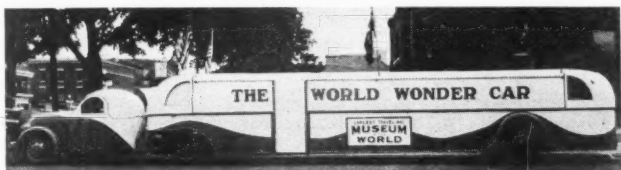
rating a low pressure gage calibrated from 0 to 6 lb.

The stand is 46 in. wide, 34 in. high and 50 in. deep mounted on large casters and finished in a special gray baked enamel with chromium trimmed bakelite handles. Ample space is provided for storing test leads and other special fittings.

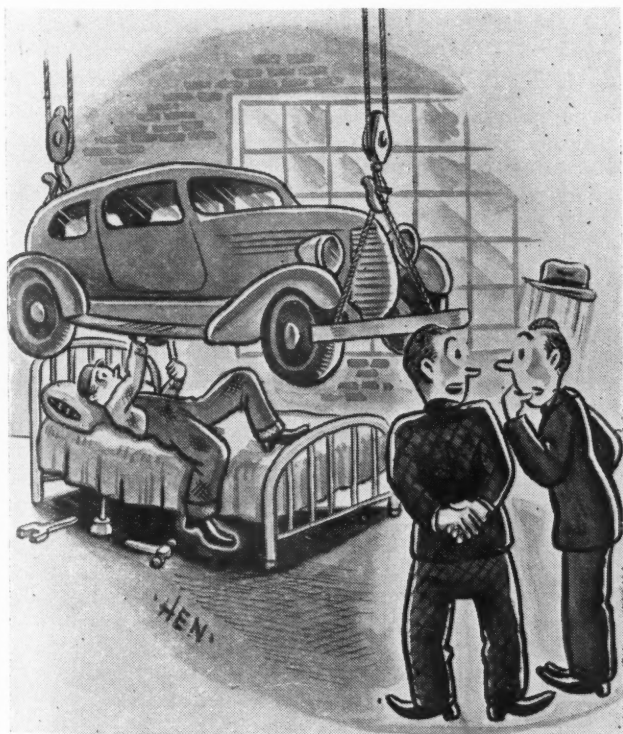




**Frank Nealon** sales manager of the Merchandising Division of the Electric Auto-Lite Co., shown with screen star **Joan Blondell**. A stage show unique in automotive circles will be presented by Auto-Lite in Chicago at the Knickerbocker Hotel roof ballroom. To be known as the "Auto-Lite Spark Plug Four Star Revue," it will be presented on December 7, 8 and 9.



Some paint job for Sherwin-Williams was the task of prettying the elongated "Wonder Car." A traveling museum, it is over 52 feet long and operates under a special government permit as it cannot legally be licensed.



"Well, yes, I suppose we do pamper him a bit!"

# LINKERT

*The World's Outstanding*

## CARBURETOR



## MR. JOBBER

THE LINKERT LINE FOR 1938

MADE ESPECIALLY FOR YOU  
IS ALREADY

THE TALK OF THE TRADE  
NO JOBBER CAN AFFORD TO BE WITHOUT IT

**LINKERT**—THE ONLY CARBURETOR  
REPLACEMENT PARTS LINE  
WHICH OFFERS FINGER-TIP CONTROL  
OF SALES—PROFITS AND STOCK  
WITH AMAZING NEW STYLE CATALOGUING  
— WE ARE MANUFACTURERS —

WITH OVER 20 YEARS' EXPERIENCE  
ENGINEERING — DESIGNING — MANUFACTURING  
CARBURETORS AND CARBURETOR PARTS  
HEADQUARTERS DURING A.S.I. SHOW  
STEVENS HOTEL—ALL WEEK  
WE WELCOME YOU TO CALL ON US

**LANGSENKAMP-LINKERT CARBURETOR CO.**  
INDIANAPOLIS - INDIANA

# Mechanical Specifications

These Specifications Are Brought Up-to-Date Each Month by the

Line Number	MAKE AND MODEL	Lowest Priced 4-d. Sed. (Divd.)	Wheelbase (In.)	Tire Size (In.)	ENGINE															CHASSIS						
					No. of Cylinders, Bore and Stroke	Taxable Hp.	Piston Displacement (Cu. In.)	Maximum Brake HP. at Specified R.P.M.	Compression Ratio (to-1.)	Displacement Factor §	Cylinder Head Material	Camshaft Drive Make	Piston Material	Oil Cleaner Make	Air Cleaner Make	Carburetor Make	Muffler Make	Electrical System Make	Battery Make	Clutch	Type and Make	Gearset Make	Universals Type and Make	Rear Axle Type and Make	Rear Axle Ratio	Front Spring Suspension
1	Bantam.....60	439	75	5.00/15	4-2.2x3.0	7.75	45.6	20-4000	7.00	....	Al	Gear	Als	No	No	Til	Buf	A	Wil	P.Ro	WG	Nb-UP	1/2 Spi	5.87	Tr	
2	Buick.....38-40	1022	122	6.50/16	8-3 1/2 x 4 1/2	30.6	248.0	107-3400	6.15	38.8	CI	LB	Ala	No	AC	SM	Wal	D	Del	P.Own	Own	m-Spi	1 1/2 Own	4.40	IC	
3	Buick.....38-60	1272	126	7.00/15	8-3 1/2 x 4 1/2	37.8	320.2	141-3600	6.35	42.3	CI	LB	Ala	No	AC	SM	Wal	D	Del	P.Own	Own	m-Spi	1 1/2 Own	3.90	IC	
4	Buick.....38-80	1645	133	7.00/16	8-3 1/2 x 4 1/2	37.8	320.2	141-3600	6.35	39.3	CI	LB	Ala	No	AC	SM	Wal	D	Del	P.Own	Own	m-Spi	1 1/2 Own	4.18	IC	
5	Buick.....38-90	2176	140	7.50/16	8-3 1/2 x 4 1/2	37.8	320.2	141-3600	6.35	38.6	CI	LB	Ala	No	AC	SM	Wal	D	Del	P.Own	Own	m-Spi	1 1/2 Own	4.55	IC	
6	Cadillac V8-38-60-60S	2085	127	7.00/16	8-3 1/2 x 4 1/2	39.2	346.0	135-3400	6.25	....	CI	Mor	Ala	No	AC	Str	Wal	D	Del	P.Long	Own	Nb-Mec	1 1/2 Own	3.92	IC	
7	Cadillac.....V8-38-65	2285	132	7.50/16	8-3 1/2 x 4 1/2	39.2	346.0	135-3400	6.25	42.8	CI	Mor	Ala	No	AC	Str	Wal	D	Del	P.Long	Own	Nb-Mec	1 1/2 Own	4.58	IC	
8	Cadillac.....V8-38-75	3075	141	7.50/16	8-3 1/2 x 4 1/2	39.2	346.0	140-3400	6.70	39.7	CI	Mor	Ala	No	AC	Str	Wal	D	Del	P.Long	Own	Nb-Mec	1 1/2 Own	4.58	IC	
9	Cadillac V-16.....38-90	5135	141	7.50/16	16-3 1/2 x 3 3/4	67.6	431.0	185-3600	7.00	....	CI	Mor	Ala	Fram	AC	Car	Wal	D	D	P.Long	Own	Nb-Mec	1 1/2 Own	4.31	IC	
10	Chevrolet HB Master	730	112 1/4	6.00/16	6-3 1/2 x 3 3/4	29.4	216.5	85-3200	6.25	35.7	CI	Own	CI	No	AC	Car	Own	D	D	P.Own	Own	m-Own	1 1/2 Own	3.72	C	
11	Chevrolet.....HA DeL.	796	112 1/4	6.00/16	6-3 1/2 x 3 3/4	29.4	216.5	85-3200	6.25	39.7	CI	Own	CI	No	AC	Car	Own	D	D	P.Own	Own	m-Own	1 1/2 Own	4.22	IC	
12	Chrysler...Roy. C-18	998	119	6.25/16	6-3 1/2 x 4 1/2	27.3	241.5	95-3600	6.20	39.3	CI*	Mor	Ala	Pur	BA	Car	NS	A	Wil	P.B&B	Own	Nb-UP	1 1/2 Own	4.10	IC	
13	Chrysler...Imp. C-19	1198	125	6.50/16	8-3 1/2 x 4 1/2	33.8	298.6	110-3400	6.20	39.5	CI*	Mor	Ala	Pur	AC	Str	NS	A	Wil	P.B&B	WG	Nb-UP	1 1/2 Own	3.91	IC	
14	Chrysler Cus.Im.C-20	2295	144	7.50/16	8-3 1/2 x 4 1/2	33.8	323.5	130-3400	6.50	....	Al	Mor	Ala	Pur	AC	Str	NS	A	Wil	P.B&B	WG	Nb-UP	1 1/2 Own	4.55	IC	
15	De Soto.....S-5	958	119	6.00/16	6-3 1/2 x 4 1/2	27.3	228.1	93-3600	6.50	37.8	CI*	Mor	Ala	Pur	AC	Car	NS	A	Wil	P.B&B	Own	Nb-UP	1 1/2 Own	4.10	IC	
16	Dodge.....Six	898	115	6.00/16	6-3 1/2 x 4 1/2	25.3	217.8	87-3600	6.50	38.0	CI	Mor	Als	Pur	AC	Str	NS	A	Wil	P.B&B	Own	Nb-UP	1 1/2 Own	4.10	C	
17	Ford.....V8-60	685 1/2	112	5.50/16	8-2.6x3.2	21.6	136.0	60-4200	6.60	....	Al	Gear	CS	No	Yes	Str	Own	O	Own	P.Os	Own	m-Spi	3/4 Own	4.44	Tr	
18	Ford.....V8-85	710 1/2	112	6.00/16	8-3 1/2 x 3 3/4	30.0	221.0	85-3800	6.12	....	Al	Gear	CS	No	Yes	Str	Own	O	Own	P.Os	Own	m-Spi	3/4 Own	3.78	Tr	
19	Graham...Std., Spec.	1065	120	6.25/16	6-3 1/2 x 4 1/2	25.3	217.8	90-3600	6.70	....	Al	LB	Als	No	Bur	Mar	Old	D	Wil	P.Long	WG	Nb-UP	1 1/2 Spi	4.27	C	
20	Graham S.c.,Cus.S.C.	1290	120	6.25/16	6-3 1/2 x 4 1/2	25.3	217.8	116-4000	6.70	....	Al	LB	Als	Fram	Bur	Mar	Old	D	Wil	P.Long	WG	Nb-UP	1 1/2 Spi	4.27	C	
21	Hudson-Terrapl.....81	864	117	6.00/16	6-3x5	21.6	212.0	96-3900	6.25	37.3	CI	GED	Al	No	AC	Car	Old	A	Nat	P.Own	Own	Nb-Spi	1 1/2 Own	4.11	Rs	
22	Hudson-Terrapl.....82	915	117	6.00/16	6-3x5	21.6	212.0	101-4000	6.25	36.6	CI	GED	Al	No	AC	Car	Old	A	Nat	P.Own	Own	Nb-Spi	1 1/2 Own	4.11	Rs	
23	Hudson, 6	984	122	6.00/16	6-3x5	21.6	212.0	101-4000	6.25	35.9	CI	GED	Al	No	AC	Car	Old	A	Nat	P.Own	Own	Nb-Spi	1 1/2 Own	4.11	Rs	
24	Hudson.....8, 84, 5, 7	1060	122, 129	6.50/16	8-3x4 1/2	28.8	254.5	122-4200	6.25	40.4	CI	GED	Al	No	AC	Car	Old	A	Nat	P.Own	Own	Nb-Spi	1 1/2 Own	4.11	Rs	
25	Hupmobile Six.....E	1045	122	6.25/16	6-3 1/2 x 4 1/2	29.4	245.3	101-3600	5.75	42.2	CI	Mor	Als	No	AC	Car	Old	A	Wil	P.B&B	WG	Nb-Spi	1 1/2 Spi	4.54	C	
26	Hupmobile Eight.....H	1325	125	6.50/16	8-3 1/2 x 4 1/2	32.5	303.2	120-3600	5.80	44.5	CI	Mor	Als	No	AC	Car	Old	A	Wil	P.Long	WG	Nb-UP	1 1/2 Spi	4.54	C	
27	La Salle.....V8, 38-50	1380	124	7.00/16	8-3 1/2 x 4 1/2	36.4	322.0	125-3400	6.25	40.7	CI	Mor	Ala	No	AC	Car	Wal	D	Del	P.Long	Own	Nb-Mec	1 1/2 Own	3.92	IC	
28	Lincoln.....V12	(i) 1375 1/2	136-145	7.50/17	12-3 1/2 x 4 1/2	46.8	414.0	150-	6.38	....	Al	Ch	Gear	Pur	Fram	AC	Str	Own	O	P.Long	Own	m-Spi	FF Tim	4.58	C	
29	Lincoln-Zephyr.....	1375 1/2	125	7.00/16	12-2 1/2 x 3 3/4	36.3	267.0	110-3800	6.70	....	Al	Ch	Gear	Pur	Fram	CS	Own	O	Own	P.Own	Own	m-Spi	3/4 Own	4.44	Tr	
30	Nash Lafay.....3810	850	117	6.00/16	6-3 1/2 x 4 1/2	27.3	234.8	95-3400	5.83	38.4	CI	Whit	Als	No	AC	Str	Wal	A	USL	P.B&B	Own	Nb-Mec	1 1/2 Own	4.11	C	
31	Nash.....Amb. 6, 3820	1050	121	6.25/16	6-3 1/2 x 4 1/2	27.3	234.8	105-3400	6.00	....	CI	Whit	Als	BS	AC	Mar	Str	Wal	A	USL	P.B&B	Own	Nb-Mec	1 1/2 Own	4.11	C
32	Nash.....Amb. 8, 3880	1208	125	7.00/16	8-3 1/2 x 4 1/2	31.2	260.8	115-3400	6.00	....	CI	Dia	Als	BS	Bur	Str	Wal	A	USL	P.B&B	Own	Nb-Mec	1 1/2 Own	4.10	C	
33	Oldsmobile.....38	967	117	6.50/16	6-3 1/2 x 4 1/2	28.4	229.7	95-3400	6.10	38.4	CI	Whit	Ala	No	AC	Car	Var	D	D	P.B&B	Own	Nb-Mec	1 1/2 Own	4.37	IC	
34	Oldsmobile.....38	1078	124	7.00/16	8-3 1/2 x 3 3/4	33.8	257.1	110-3600	6.20	41.7	CI	LB	Ala	No	AC	Car	Var	D	D	P.B&B	Own	Nb-Mec	1 1/2 Own	4.37	IC	
35	Packard Six.....1600	1175	122	6.50/16	6-3 1/2 x 4 1/2	29.4	245.3	100-3600	6.52	40.0	CI	Mor	Als	Pur	AC	CG	Old	D	Wil	P.Long	Own	Nb-Mec	1 1/2 Own	4.54	IC	
36	Packard Eight.1601, 2	1325	127, 48	7.00/16	8-3 1/2 x 4 1/2	33.8	282.0	120-3800	6.60	41.4	Al	Mor	Als	Pur	AC	Str	Old	A	PD	P.Long	Own	Nb-UP	1 1/2 Own	(b) 4.10	IC	
37	Pack. Sup. 8, 1603, 4.5	2790	127-34-39	7.50/16	8-3 1/2 x 5	32.5	320.0	130-3200	6.50	41.6	Al	Mor	Als	Pur	AC	Str	Old	A	PD	P.Long	Own	Nb-UP	1 1/2 Own	4.69	IC	
38	Pack. Twelve.1607, 8	4155	134, 39	8.25/16	12-3 1/2 x 4 1/2	56.7	473.0	175-3200	6.40	45.3	Al	Mor	Als	Pur	AC	Str	Old	A	PD	P.Long	Own	Nb-UP	1 1/2 Own	4.41	IC	
39	Pierce-Arrow.....1801	3375	138-147	(g)	8-3 1/2 x 5	39.2	385.0	150-3400	6.40	37.6	Al	Whit	Ala	Pur	AC	Str	Buf	D	Wil	P.Long	WG	Nb-UP	1 1/2 Own	4.58	C	
40	Pierce-Arrow.....1802	3895	138-144	7.50/17	12-3 1/2 x 4	58.8	462.0	185-3400	6.40	42.0	Al	Whit	Ala	Pur	AC	Str	Buf	D	Wil	P.Long	WG	Nb-UP	1 1/2 Own	4.58	C	
41	Pierce-Arrow.....1803	5015	147	7.50/17	12-3 1/2 x 4	58.8	462.0	185-3400	6.40	40.7	Al	Whit	Ala	Pur	AC	Str	Buf	D	Wil	P.Long	WG	Nb-UP	1 1/2 Own	4.58	C	
42	Plymouth.....P5	730	112	5.50/16	6-3 1/2 x 4 1/2	23.4	201.3	82-3600	6.70	36.6	CI*	Mor	Ala	No	BA	BC	NS	A	Wil	P.B&B	Own	Nb-UP	1 1/2 Own	3.90	C	
43	Plymouth.....P6	803	112	6.00/16	6-3 1/2 x 4 1/2	23.4	201.3	82-3600	6.70	36.2	CI*	Mor	Ala	No	BA	Car	NS	A	Wil	P.B&B	Own	Nb-UP	1 1/2 Own	4.10	C	
44	Pontiac 6.....38-26DA	916	117	6.00/16	6-3 1/2 x 4	28.3	222.7	85-3520	6.20	37.4	CI	Mor	CHI	No	AC	Car	BH	D	Del	P.Own	Own	Nb-Mec	1 1/2 Own	4.37	IC	
45	Pontiac 8.....38-28DA	980	122	6.50/16	8-3 1/2 x 3 3/4	33.8	248.9	100-3700	6.20	40.0	CI	Mor	CHI	No	AC	Car	BH	D	Del	P.Own	Own	Nb-Mec	1 1/2 Own	4.37	IC	
46	Stude. Six & Com....	965	116 1/2	6.00/16	6-3 1/2 x 4 1/2	26.3	226.0	90-3400	6.00	41.2	CI	Dia	Ly	Fram	AC	Str	Buf	A	Wil	P.B&B	WG	Ru-Th	1 1/2 Spi	4.55	IT	
47	Studebaker. Pres. 4C	1195	122	6.50/16	8-3 1/2 x 4 1/2	30.0	250.4	110-3600	6.00	41.6	CI	Dia	Ly	Fram	AC	Str	Buf	D	Wil	P.Long	WG	Nb-Spi	1 1/2 Spi	4.85	IT	
48	Willys.....38	573	100	5.50/16	4-3 1/2 x 4 1/2	15.6	134.2	48-3200	5.70	31.6	CI*	LB	CI	F-O	AC	Til	Buf	A	USL	P.R-B	WG	m-UP	1 1/2 Own	4.30	C	

## ABBREVIATIONS-General

—Others also  
 \*—Measured on rim of Flywheel  
 1/2—Semi-floating  
 3/4—Three-quarter floating  
 †—With clearance of .015 the valve is .004 off its seat.  
 ‡—Does not include Federal Taxes  
 §—Computed on basis of displacement, gear ratio, effective tire

diameter, and weight with normal load.  
 (a) —(1/4 to 1/2)  
 A—Above (rods removed from)  
 A—After top center  
 AA—Automatic adjuster  
 Ad—Advanced  
 Al—Aluminum  
 Ala—Aluminum, Anode processed  
 Als—Aluminum with struts  
 Au—Automatic  
 (b) —4.36-1601; 4.70-1602

B—Below (rods removed from)  
 B—Before top center  
 Bm—Before marks on vibration damper  
 (c) —1-1/2, 1-3/4  
 C—Conventional  
 C—Cold (Tappet clearance)  
 Ch—Chain  
 CHI—Chrome Nickel Iron  
 CI—Cast Iron  
 (e) —0 + 1/16 - 0  
 (f) —1/16 + 1/16 - 0

F—Floating (Piston Pin)  
 FF—Full floating  
 (g) —138 in -7.00/17; 147 in -7.50/17  
 H—Hot (tappet clearance)  
 (i) —4900-5100 IC—Independent coil  
 IT—Independent Transverse  
 Ly—Lynite  
 Ch—Chain  
 CHI—Chrome Nickel Iron  
 CI—Cast Iron  
 (e) —0 + 1/16 - 0  
 (f) —1/16 + 1/16 - 0

P—Single plate clutch  
 PH—Power operated, hydraulic brakes R—Rod (Pin locked in)  
 RS—Radial Safety Control  
 (r)—Out only Ru—Rubber  
 TC—Top Center  
 Tr—Transverse  
 Var—Various  
 x—At 1000 R.P.M.  
 y—At 2800 R.P.M.



# Tune-Up Specifications

Car Manufacturers and Supersede All Others Previously Published

Service Brake Make and Type			Steering Gear Make and Type	Compression Pressure at Cranking Speed (Lbs.)	Spark Plug Make and Type	RINGS		Piston Pin Diameter	Piston Pin Locked In	VALVES					IGNITION							FRONT AXLE					Line Number							
						No. and Width Comp.	No. and Width Oil			Head Diameter and Seat Angle			Operating Tappet Clearance		Intake Valve Opens Before or After T.C.	No. of Degrees	No. of Flywheel Teeth	Breaker Points Gap (Ins.)	Spark Plug Gap (Ins.)	Timing		Breaker Housing	Rods Removed From	Crankpin Diameter (Ins.)	Crankpin Length (Ins.)	Capacity Crankcase (Qts.)		Capacity Cooling System (Qts.)	Caster (Degrees)	Camber (Degrees)	Toe-In (Inches)	King Pin Inclination (Degrees)		
										Inlet (Ins.)	Inlet Seat Angle (Degrees)	Exhaust (Ins.)	Exhaust Seat Angle (Degrees)	Inlet						Exhaust	Inlet Tappet Clearance for Valve Timing													
OM	La	90	Ch-6	2-3/8	1-1/8	2 1/2	1-1/8	R	1 3/8	30	1 3/8	30	.279	.006	.006	.006	19B	.....	.022	.025	2 1/2	B	1B	Au	A	1 1/8	1 1/4	1 1/2	7	5	1/2	0° 9'	1 1/2	1
OH	S	126x	AC-46	2(c)	2-1/8	2 1/2	1-1/8	R	1 1/8	45	1 1/8	45	.372	.015H	.015H	13B	5 1/4	B	.015	.025	4B	1 1/8	Au	A	2	1.21	6 13/4	N 1/2	1-1/8	1-1/8	1-1/8	3-1/4	2	
OH	S	130x	AC-46	2(c)	2-1/8	2 1/2	1-1/8	R	1 1/8	45	1 1/8	45	.372	.015H	.015H	14B	6B	B	.015	.025	6B	2.6B	Au	A	2 1/4	1.31	8 17	N 1/2	1-1/8	1-1/8	1-1/8	3-1/4	3	
OH	S	130x	AC-46	2(c)	2-1/8	2 1/2	1-1/8	R	1 1/8	45	1 1/8	45	.372	.015H	.015H	14B	6B	B	.015	.025	6B	2.6B	Au	A	2 1/4	1.31	8 17	N 1/2	1-1/8	1-1/8	1-1/8	4-1/2	4	
OH	S	130x	AC-46	2(c)	2-1/8	2 1/2	1-1/8	R	1 1/8	45	1 1/8	45	.372	.015H	.015H	14B	6B	B	.015	.025	6B	2.6B	Au	A	2 1/4	1.31	8 17	N 1/2	1-1/8	1-1/8	1-1/8	4-5	5	
BH	S	155	AC-45	2-1/8	2-3/8	7/8	3/4	F	1.88	45	1.63	45	.341	AA	AA	AA	TC	TC	.015	.027	5B	2 1/2	Ad	A	2.46	2 3/8	7 24	N 3/4-0	1-1/8	1-1/8	1-1/8	4° 51'	6	
BH	S	155	AC-45	2-1/8	2-3/8	7/8	3/4	F	1.88	45	1.63	45	.341	AA	AA	AA	TC	TC	.015	.027	5B	2 1/2	Ad	A	2.46	2 3/8	7 25	0-1/4	1-1/8	1-1/8	5° 38'	7		
BH	S	170	AC-45	2-1/8	2-3/8	7/8	3/4	F	1.88	45	1.63	45	.341	AA	AA	AA	TC	TC	.015	.027	5B	3B	Ad	A	2.46	2 3/8	7 25	0-1/4	1-1/8	1-1/8	5° 38'	8		
BH	S	180	AC-45	2(c)	1-1/8	1 1/2	1 1/2	R	1.50	45	1.37	45	.341	AA	AA	AA	8B	.....	.015	.027	6B	3/4B	Ad	A	2	1 1/2	11 30	0-1/4	1-1/8	1-1/8	5° 38'	9		
OH	O	.....	AC-46	2-1/8	1-1/8	1 1/2	1 1/2	R	1 1/4	30	1 1/4	30	.341	.006H	.013H	.006	9B	3 1/2	B	.018	.040	5B	2B	Au	A	2 1/8	1 1/2	5 14	1 1/4-2 1/4	1 1/2-1 1/2	1 1/8-1 1/8	7° 10'	10	
OH	O	.....	AC-46	2-1/8	1-1/8	1 1/2	1 1/2	R	1 1/4	30	1 1/4	30	.341	.006H	.013H	.006	9B	3 1/2	B	.018	.040	5B	2B	Au	A	2 1/8	1 1/2	5 14	1 1/4-2 1/4	1 1/2-1 1/2	1 1/8-1 1/8	7° 10'	11	
LH	G	145x	Ch-J-8	2-1/8	2-3/8	7/8	3/4	F	1 1/8	45	1 1/8	45	.340	.008H	.010H	.014	8B	3 1/4	B	.020	.025	TC	TC	Au	A	2 1/8	1 1/2	5 20	1/2-2 1/2	(a)	0-1/8	4 1/2-6	12	
LH	G	145x	Ch-J-8	2-1/8	2-3/8	7/8	3/4	F	1 1/8	45	1 1/8	45	.340	.006H	.010H	.011	2B	3/4B	B	.018	.025	3B	1 1/8	Au	A	2 1/8	1 1/2	6 20	1/2-2 1/2	(a)	0-1/8	4 1/2-6	13	
LH	G	155x	Ch-H-10	2-1/8	2-3/8	7/8	3/4	F	1 1/8	45	1 1/8	45	.340	.006H	.010H	.011	2B	3/4B	B	.018	.025	TC	TC	Au	A	2 1/8	1 1/2	6 20	1-3	(a)	0-1/8	4 1/2-6	14	
LH	G	145x	A-A-7	2-1/8	2-3/8	7/8	3/4	F	1 1/8	45	1 1/8	45	.340	.008H	.010H	.014	8B	3 1/4	B	.020	.025	TC	TC	Au	A	2 1/8	1 1/2	5 20	1/2-2 1/2	(a)	0-1/8	4 1/2-6	15	
LH	O	140x	Ch-J-8	2-1/8	2-3/8	7/8	3/4	F	1 1/8	45	1 1/8	45	.340	.006H	.008H	.011	6A	2 1/2	A	.020	.025	4A	1 1/8	Au	A	2 1/8	1	5 15	1-3	1/4-3/4	0-1/8	4 1/2-5 1/2	16	
OM	O	150y	Ch-H-10	2-1/8	1-3/8	1 1/2	1 1/2	F	1.28	45	1.28	45	.279	.013C	.013C	.013	9 1/2B	.....	.015	.025	4B	1 1/8	Au	A	1.60	1.54	4 15.2	8	1	1 1/8-1 1/8	1 1/8-1 1/8	8	17	
OM	O	100	Ch-7	2-1/8	1-3/8	1 1/2	1 1/2	F	1.11	45	1.11	45	.310	.013C	.013C	.013	9 1/2B	.....	.015	.025	4B	1 1/8	Au	A	2	1.57	5 22	8	1	1 1/8-1 1/8	1 1/8-1 1/8	8	18	
OH	R	160x	Ch-J-9	2-3/8	1-1/8	1 1/2	1 1/2	R	1 1/4	30	1 1/4	45	.341	.010H	.010H	.012	4 1/2B	1 1/2	B	.018	.025	4B	.....	A	2 1/8	1 1/8	5 15	3-4	1	1/8-1 1/8	7 1/2	19		
OH	R	120	Ch-J-9	2-3/8	1-1/8	1 1/2	1 1/2	R	1 1/4	30	1 1/4	45	.341	.010H	.010H	.012	4 1/2B	1 1/2	B	.018	.025	4B	.....	A	2 1/8	1 1/8	5 15 1/2	3-4	1	1/8-1 1/8	7 1/2	20		
BH	G	80	Ch-J-8-A	2-3/8	2-1/8	3/4	3/4	F	1 1/8	45	1 1/8	45	.341	.008	.010	.010	10 1/2B	4B	B	.020	.032	TC	TC	Au	A	1 1/8	1.39	5 12 1/2	2-3	1-1 1/2	0-1/8	7	21	
BH	G	80	Ch-J-8-A	2-3/8	2-1/8	3/4	3/4	F	1 1/8	45	1 1/8	45	.341	.008	.010	.010	10 1/2B	4B	B	.020	.032	TC	TC	Au	A	1 1/8	1.39	5 12 1/2	2-3	1-1 1/2	0-1/8	7	22	
HM	G	80	Ch-J-8-A	2-3/8	2-1/8	3/4	3/4	F	1 1/8	45	1 1/8	45	.341	.008	.010	.010	10 1/2B	4B	B	.020	.032	TC	TC	Au	A	1 1/8	1.39	5 12 1/2	2-3	1-1 1/2	0-1/8	7	23	
HM	G	80	Ch-J-8-A	2-3/8	2-1/8	3/4	3/4	F	1 1/8	45	1 1/8	45	.341	.008	.010	.010	10 1/2B	4B	B	.020	.032	TC	TC	Au	A	1 1/8	1.39	5 12 1/2	2-3	1-1 1/2	0-1/8	7	24	
H	G	.....	Ch-7	2-1/8	2-3/8	7/8	.....	.....	1 1/8	45	1 1/8	45	.341	.010	.013	.....	2B	.....	.022	.027	7B	.....	Au	A	2 1/8	1 1/4	6 18	1 1/2	1	1 1/8-1 1/8	8 1/2	25		
H	G	.....	Ch-7	2-1/8	2-3/8	7/8	.....	.....	1 1/8	45	1 1/8	45	.341	.008	.013	.010	1A	.....	.015	.027	7B	.....	Au	B	2 1/4	1 1/4	8 21.5	1 1/2	1	1 1/8-1 1/8	7 1/2	26		
BH	S	155x	AC-45	2-1/8	2-3/8	7/8	.....	F	1.88	45	1.63	45	.341	AA	AA	AA	TC	TC	.015	.027	5B	2 1/2	Ad	A	2 1/8	2 1/2	7 25	N 3/4-0	1-1/8	1-1/8	4° 51'	27		
OM	O	105	Ch-7	2-1/8	2-3/8	7/8	.....	F	1.54	45	1.54	45	.311	.004C	.006C	.004	21B	6 1/4	B	.015	.022	7B	2 1/2	Au	B	2 1/2	2	12 32	8	1	1 1/8-1 1/8	7 1/2	28	
OM	O	100	Ch-H-10	2-1/8	1-3/8	1 1/2	.....	F	1.54	45	1.54	45	.311	.013C	.013C	.....	19 1/2B	6 1/4	B	.015	.029	4B	1 1/8	Au	A	2 1/2	1.57	6 27	4	1	1 1/8-1 1/8	4	29	
BH	G	110	A-B-7	2-1/8	2-3/8	7/8	.....	F	1 1/8	45	1 1/8	45	.340	.015	.015	.015	.....	.....	.022	.025	4A	.....	Au	A	2	1.42	6 20	1 1/2	1 1/2	0	7	30		
BH	G	125	AC-45	2-1/8	2-3/8	7/8	.....	F	1 1/8	45	1 1/8	45	.372	.008H	.015H	.....	.....	.....	.020	.025	4Bm	1 1/8	Au	A	2	1.42	7 20	1 1/2	1 1/2	0	7	31		
BH	G	125	AC-45	2-1/8	2-3/8	7/8	.....	F	1 1/8	45	1 1/8	45	.375	.015H	.015H	.015H	.....	.....	.020	.025	9Bm	2 1/8	Au	B	2	1.24	7 18	1 1/2	1 1/2	0	7	32		
BH	S	146x	AC-45	2-1/8	2-3/8	7/8	.....	P	1 1/8	30	1 1/8	45	.341	.008H	.011	(k)	5B	2B	B	.020	.040	TC	TC	Au	A	2 1/8	1 1/8	6 17	0-N 3/4	1-1/8	1-1/8	4° 51'	33	
BH	S	152x	AC-45	2-1/8	2-3/8	7/8	.....	P	1 1/8	30	1 1/8	45	.341	.008H	.011	(n)	TC	TC	B	.015	.030	2B	3/4B	Au	A	2 1/8	1 1/8	7 21	0-N 3/4	1-1/8	1-1/8	4° 51'	34	
H	O	110	AC-103 (z)	2-1/8	1-1/8	7/8	.....	F	1.57	30	1 1/8	45	.340	.007H	.010H	.....	1B	.....	.020	.028	6B	1 1/8	Au	A	2 1/8	1 1/4	6 15	1 1/2	1 1/2	1 1/2	1 1/2	1° 54'	35	
H	O	110	AC-103 (z)	2-1/8	1-1/8	7/8	.....	F	1.57	30	1 1/8	45	.340	.007H	.010H	.....	1B	.....	.020	.028	6B	1 1/8	Au	A	2 1/8	1 1/4	6 16	1 1/2	1 1/2	1 1/2	1 1/2	1° 54'	36	
H	O	110	AC-103 (z)	2-1/8	1-1/8	7/8	.....	F	1.57	45	1 1/8	45	.340	.006H	.008H	.....	30B	9 1/2	B	.015	.028	6B	2 1/8	Au	B	2	1 1/2	8 20	2 1/2	1 1/2	1 1/2	1 1/2	1° 37'	37
BPH	O																																	

## Motor Car Price, Weight and Body Table

*Following are delivered prices at factory for cars with standard equipment and include all federal taxes with exception of Ford and Lincoln. Optional equipment, state or local taxes, transportation charges and finance charges are extra.*

BODY MAKE AND MODEL	Delivered Price	Shipping Weight	BODY, MAKE AND MODEL	Delivered Price	Shipping Weight	BODY, MAKE AND MODEL	Delivered Price	Shipping Weight	BODY, MAKE AND MODEL	Delivered Price	Shipping Weight	BODY, MAKE AND MODEL	Delivered Price	Shipping Weight	BODY, MAKE AND MODEL	Delivered Price	Shipping Weight
BANTAM			CHEVROLET (Cont.)			GRAHAM			LA SALLE			PACKARD			PIERCE- ARROW (Cont.)		
Pick-up.....	465		Master De Luxe Series HA			Standard Coupe.....	995		Series 38-50 Conv. Coupe.....	1415	3735	Six-1600 Tour. Sedan, 4d.....	1175	3525	Brunn Town Bro. Conv. Sedan.....	6040	6085
Bus. Coupe.....	439		Sedan, 4d.....	796	2915	Comb. Coupe.....	1045		Conv. Sedan.....	1820	3870	Tour. Sedan, 2d.....	1145	3475	Conv. Sedan.....	4820	5921
Std. Coupe.....	469		Coach, 2d.....	730	2900	Sedan, 4d.....	1065		Coupe.....	1300	3745	Club Coupe.....	1120	3425	Twelve 1803 Sedan.....	5015	6125
Roadster.....	479		Tn. Sed., Trk., 2d.....	750	2915	Special Bus. Coupe.....	1095		Tour. Sedan, 2d.....	1340	3800	Conv. Cpe., 2-4p.....	1235	3500	Enc. Dr. Lim.....	5220	6145
			Spt. Sed., Trk., 4d.....	817	2940	Comb. Coupe.....	1135		Tour. Sedan, 4d.....	1380	3830	Business Coupe.....	1075	3450			
			Bus. Coupe, 2d.....	714		Sedan, 4d.....	1155					Chassis.....	810	2485			
			Sport Coupe, 2d.....	750	2870				LINCOLN								
Special 49	981	3515				Supercharger Bus. Coupe.....	1230		V12-136 in. wb. Conv. Roadster.....	5300		Eight-1601 Tour. Sedan, 4d.....	1325	3650	PLYMOUTH		
Sport Sedan, 2d.....	1006	3520	CHRYSLER			Comb. Coupe.....	1270		Coupe.....	5300		Tour. Sedan, 2d.....	1295	3600			
Tour. Sedan, 2d.....	1022	3535				Sedan, 4d.....	1290		Wilby Coupe.....	5900		Club Coupe.....	1270	3550	Six P5	645	2694
Sport Sedan, 4d.....	1047	3560	Royal Six			Custom Super Charger			Brinn Vict.....	4900		Conv. Cpe., 2-4p.....	1365	3625	Coupe, 2d.....	685	2774
Bus. Coupe, 2d.....	945	3385	Bus. Coupe, 2d.....	918	3090	Bus. Coupe.....	1320					Conv. Sedan.....	1650	3775	Sedan, 2d.....	730	2744
Sport Coupe, 2d.....	1001	3425	Coupe, 2d.....	963	3135	Comb. Coupe.....	1360		V12-145 in. wb. Wilby Tour.....	5900		Bus. Coupe.....	1225	3570	Sedan, 4d.....		
Conv. Coupe, 2d.....	1103	3575	Conv. Coupe.....			Sedan, 4d.....	1380		Jud. Berline.....	6000		Chassis.....	960	2620			
Conv. Phase, 4d.....	1406	3705	Tour. Bro., 2d.....	975	3165				Jud. Berline.....	6100		Eight- De Luxe- 1601-D			De Luxe Six-P6	730	2754
			Brougham, 4d.....	963	3160	6-83			Jud. Sed. Lim.....	6300		Tour. Sedan.....	1540	3685	Coupe, 2p.....	770	2799
Century 60	1256	3760	Tour. Sedan, 4d.....	1010	3180	Coupe, 3p., 2d.....	909	2825	Brinn Cabriolet.....	6900		Eight-1602 Tour. Sedan, 7p.....	1955	4195	Conv. Coupe, 2d.....	850	
Tour. Sedan, 2d.....	1272	3785	Conv. Sedan.....	998	3170	Brougham, 2d.....	948	2935	Brinn Cabriolet.....	7000		Tour. Lim.....	2110	4245	Sedan, 2d.....	773	2814
Tour. Sedan, 4d.....	1297	3780	Sedan, 7p., 4d.....			Tour. Bro., 2d.....	968	2940	Brinn Tour. Cab.....	7200					Sedan, 4d.....	803	2834
Tour. Sedan, 2d.....	1226	3690	Sed. Lim., 7p., 4d.....			Vict. Coupe 2d.....	984	3005	Brinn Brougham Sedan.....	7000		Super-Eight- 1603			Tour. Sedan, 2d.....	785	2819
Conv. Coupe, 2d.....	1359	3815	Imperial Eight			Sedan, 4d.....	1005	3010	Limousine.....	5100		Chassis.....	2090	3300	Tour. Sedan, 4d.....	815	2844
Conv. Phase, 4d.....	1713	3950	Bus. Coupe, 2d.....	1123	3450	Coupe, 2d.....	1041		Conv. Sed. LeB.....	5200					Sedan, 7p.....	1005	
			Coupe, 2d.....	1160		Tour. Bro., 2d.....	1104		Wilby Lim.....	6000		Super-Eight- 1604			Sedan Lim.....	1095	
Roadmaster			Tour. Bro., 2d.....	1165	3560	Conv. Coupe.....			Wilby Sport Sed.....	7000		Formal Sedan.....	3710	4795			
Phae. Conv., 4d.....	1983	4325	Conv. Coupe.....	1198	3565	Conv. Bro.....			Panel Bro.....	7400		Tour. Sedan, 4d.....	2995	4670	PONTIAC		
For. Sed., Trk., 4d.....	1758	4305	Conv. Sedan, 4d.....			8-84 De Luxe						Club Sedan.....	2990	4600	De Luxe Six		
Sport Sedan, 4d.....	1645	4245				Coupe, 3p., 2d.....	990	3010	LINCOLN- ZEPHYR			Coupe, 5p.....	2965	4595	Bus. Coupe, 2d.....	835	3180
			Custom Imp. 8			Brougham, 2d.....	1028	3115	Coupe, 3p., 2d.....	1295		Coupe, 2-4p.....	2925	4585	Sedan, 2d.....	865	3265
Limited 90	2350	4585	Sedan, 4d., 7p.....	2295		Vict. Coupe, 2d.....	1031	3060	Sedan, 2d.....	1375		Conv. Cpe., 2-4p.....	3210	4580	Sport Coupe, 2d.....	891	3200
Tour. Sedan, 4d.....	2453	4665	Sed. Lim., 4d., 7p.....	2395		Tour. Bro., 2d.....	1049	3123	Sedan, 4d.....	1355		Victoria.....	3670	4650	Tour. Sedan, 2d.....	891	3265
Tour. Sedan, 4d.....	2176	4580				Sedan, 4d.....	1060	3135	Limousine, 4d.....	1550		Chassis.....	2170	3375	Cabriolet, 2d.....	993	
						Tour. Sedan, 4d.....	1080	3160	Conv. Coupe.....	1650					Tour. Sedan, 2d.....	916	3285
						Conv. Coupe.....	1121		Conv. Sedan.....	1790					Tour. Sedan, 4d.....	942	3285
						Conv. Bro.....	1185					Super- Eight-1605			Conv. Sedan.....	1310	
CADILLAC			Bus. Coupe, 2d.....	870	3039	8-85 Custom			NASH			Tour. Sedan, 7p.....	3165	4700	De Luxe Eight		
V8-Series 60			Coupe, rumb., 2d.....			Coupe, 3p., 2d.....	1080		Nash-La Fayette			Tour. Lim.....	3305	4815	Bus. Coupe, 2d.....	898	3320
*Tour. Sedan, 5p.....	2085		Brougham, 2d.....			Brougham, 2d.....	1134		Master			Conv. Sedan.....	3970	4945	Sedan, 2d.....	934	3395
			Tour. Bro., 2d.....	930	3119	Vict. Coupe, 2d.....	1131		Bus. Coupe.....	770		Chassis.....	2230	3430	Sport Coupe, 2d.....	955	3325
V8-Series 65			Sedan, 4d.....	958	3134	Tour. Bro., 2d.....	1155		Sedan, 2d.....	805					Tour. Sedan, 2d.....	960	3405
*Conv. Sedan, 5p.....	2600	4520	Tour. Sedan, 4d.....	970	3139	Sedan, 4d.....	1171	3190	Sedan, 4d.....	850		Twelve-1607			Cabriolet, 2d.....	1057	
Tour. Sedan, 5p.....	2285	4540	Conv. Coupe.....	1045		Tour. Sedan, 2d.....	1191	3195	De Luxe			Formal Sedan.....	4865	5550	Sedan, 4d.....	980	
T. Sed., 5p. (Div.)	2360	4580	Conv. Sedan, 4d.....	1375		Conv. Coupe.....			Cabriolet.....	940		Tour. Sed., 4d.....	4155	5525	Tour. Sedan, 4d.....	1006	3420
			Sedan, 7p., 4d.....	1195		Conv. Bro.....			A. P. Coupe.....	860		Club Sedan.....	4255	5520	Conv. Sedan.....	1353	
			Limousine, 7p.....	1285		Country Club			Sedan, 2d.....	855		Coupe, 5p.....	4185	5415			
V8-Series 75	3380	4665				8-87			Bus. Coupe.....	820		+Coupe, 2-4p.....	4135	5255			
Conv. Coupe, 2p.....	3490	5110	DODGE			Sedan, 4d.....	1199	3270	Sedan, 4d.....	900		+Victoria.....	5230	5345			
Coupe, 2p.....	3275	4675	Bus. Coupe, 2d.....	808	2877	Tour. Sedan, 4d.....	1219	3275				Chassis.....	2950	3910			
Coupe, 3-5p.....	3380	4775	Coupe, 2d.....	858	2952	Terraplane			Nash-Ambassador						Twelve-1608		
Town Sedan, 5p.....	3635	4900	Conv. Coupe, 2d.....	960		6-81 De Luxe			Six			Tour. Sedan, 7p.....	4485	5600	Tour. Lim.....	4690	5680
Tour. Sedan, 5p.....	3075	4865	Sedan, 2d.....	858	2977	Coupe, 3p., 2d.....	789	2725	Bus. Coupe.....	970		+Conv. Sedan.....	5390	5680	Chassis.....	3140	3965
Tour. Sedan Div.	3155	4925	Tour. Sedan, 2d.....	870	2957	Brougham, 2d.....	822	2823	A. P. Coupe.....	1015							
Formal Sed., 5p.....	3990	4865	Sedan, 4d.....	898	2977	Tour. Bro., 2d.....	843	2825	Sedan, 2d.....	1000							
Formal Sed., 7p.....	3990	5105	Tour. Sedan, 4d.....	910	2967	Vict. Coupe, 2d.....	835	2783	Sedan, 4d.....	1050							
Tour. Sedan, 7p.....	3205	4945	Sedan, 4d., 7p.....	1095		Sedan, 4d.....	864	2885	Cabriolet, 2d.....	1090							
Bus. Tr. Sed., 8p.....	3105	4945	Conv. Sedan, 4d.....	1275		Tour. Sedan, 4d.....	884	2890									
Tour. Sedan, 7p.....	3360	5105	Limousine, 4d.....	1185		Conv. Coupe, 2d.....	926		Nash-Ambassador								
Bus. Tr. Imp., 8p.....	3255	5105				Conv. Bro., 2d.....	990		Eight								
Town Car, 7p.....	5115	5175	FORD						Bus. Coupe.....	1120							
						6-82 Super.			A. P. Coupe.....	1165							
16-Series 90	5440		V8-60			Coupe, 3p., 2d.....	845	2865	Sedan, 2d.....	1150							
Conv. Coupe.....	6000		Tudor Sedan.....	640		Brougham, 2d.....	878	2870	Sedan, 4d.....	1200							
Conv. Sed., Trk.....	5335		Fordor Sedan.....	685		Tour. Bro., 2d.....	899	2870	Cabriolet, 2d.....	1240							
Coupe, 2p.....	5335		Coupe, 5W.....	595		Victoria, 2d.....	886	2805									
Coupe, 5p.....	5440					Sedan, 4d.....	915	2925	OLDSMOBILE								
Town Sedan.....	5695					Tour. Sedan, 4d.....	935	2930	Six								
Touring Sedan.....	5135					Conv. Coupe, 2d.....	971		Bus. Coupe, 2d.....	870	3205						
Tour. Sed., (Div.).....	5215					Conv. Bro., 2d.....	1034		Club Coupe, 2d.....	926	3195						
Formal Sed., 5p.....	6050								Sedan, 2d.....	916	3275						
Formal Sed., 7p.....	6050								Tr. Sed., Trk., 2d.....	941	3265						
Tour. Sedan, 7p.....	5265								Sedan, 4d.....	967	3285						
Imp. Tr. Sed., 70.....	5420								Tr. Sed., Trk., 4d.....	992	3290						
Town Car, 7p.....	7170								Conv. Coupe, 2d.....	1043	3360						
CHEVROLET																	
Master Series HB			De Luxe V8-85			Six											
Sedan, 4d.....	730	2840	Tudor Sedan.....	725		Tour. Sedan, 4d.....	1045	3320									
Coach, 2d.....	668	2795	Fordor Sedan.....	770		Sedan, 4d.....	1180	3370									
Twn. Sed., Trk., 2d.....	689	2825	Phaeton	820		DeL. Sed., 4d.....	1222	3400									
Spt. Sed., Trk., 4d.....	750	2845	Coupe, 5W.....	685		Custom Sed., 4d.....	1340	3440									
Bus. Coupe, 2d.....	848		Conv. Coupe.....	770													
Cabriolet, 2d.....	755		Conv. Sedan.....	900		Eight											
			Conv. Club Coupe.....	800		Tour. Sed., 4d.....	1325	3955									
			Club Coupe.....	745		DeL. Tr. Sed., 4d.....	1365	4085									
						Cus. Tr. Sed., 4d.....	1485	4125									

\*—5 Wheel Equipment

†—6 Wheel Equipment



# NEWTYPE

WIRE • CABLE • TAPE

THE LINE THAT LEADS

NOKRODE  
BATTERY CABLE UNITS

SUPER DUTY  
IGNITION CABLE UNITS

OILPROOF  
PORTABLE CORD

THIOKRENE  
NON-BRAID IGNITION WIRE

CELLOPHANE  
WRAPPED FRICTION TAPE

TO PROFITS

**The Okonite Company  
Newtype Automotive Division  
Passaic, New Jersey**

*"Founded 1878 — over half a century of service"*

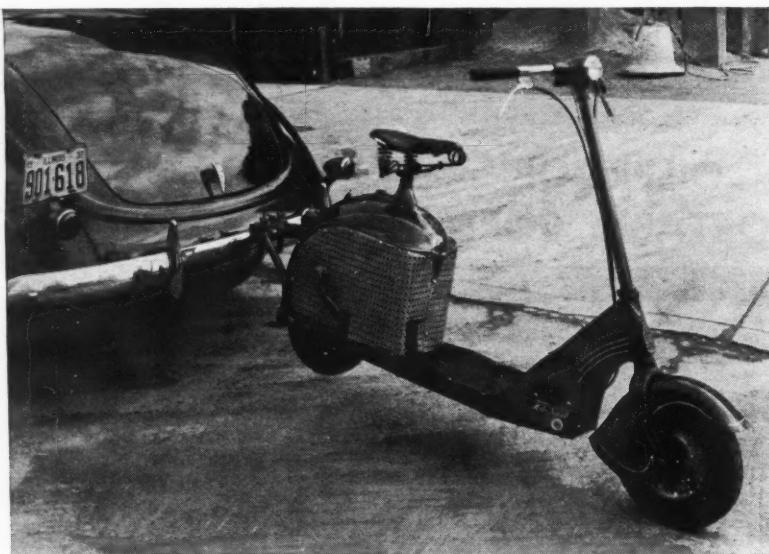
WAREHOUSES • CHICAGO • LOS ANGELES  
SAN FRANCISCO • WILKES BARRE

## MEMA Monthly Business Index

(January, 1925, equals 100)

	Sep. 1937	Aug. 1937	Sep. 1936
Original Equipment Shipments to Vehicle Mfrs.....	149	140	108
Service Parts Shipments to Wholesalers .....	164	164	153
Accessories Shipments to Wholesalers .....	128	118	98
Service Equipment Shipments to Wholesalers.....	148	131	105
GRAND INDEX (Composite) of above divisions....	149	141	114
Index Car and Truck Production .....	73	169	58
Index General Business (Bank Transactions) .....	69	70	72

## MOTO-SCOOT FOR SERVICE



### MOTO-SCOOT WITH TOW BAR

GARAGES, SERVICE STATIONS and AUTOMOBILE DEALERS will find this new vehicle handy for their men to use in answering outside calls. Sturdily constructed rear bracket fastens to the rear bumper of practically all makes of automobiles in thirty seconds or less! Trails behind at any speed.

120 miles to the gallon. Moto-Scoot is economical to run, too. Travels 120 miles, from Louisville to Indianapolis, on one gallon of gasoline. A recent economy test by the Gilmore Oil on the West Coast actually averaged 150 miles to the gallon.

**STURDILY CONSTRUCTED** . . . Steel channel frame with plywood floorboard insert; center poise steering, Eisemann Magneto; Tiltonson Carburetor; Goodyear Tires; automotive type brake.

MOTO-SCOOT can be used for all purposes; collections, messages, service calls, transportation, sport and utility. Solo model priced at only \$89.00 and up f.o.b. factory at Chicago.

Write for complete details to

### MOTO-SCOOT MANUFACTURING CO.

219 South Western Ave., Chicago, Ill.

### Reeves Hits Worker Attitude

The disturbing factor in the automobile manufacturing outlook now is the "very dangerous 'they can't discharge me' attitude of too many misinformed workers with chips on their shoulders, which is lessening efficiency to the point where it is adding to car costs," declared Alfred Reeves, vice-president and general manager of the Automobile Manufacturers Association, addressing the Detroit Rotary Club on Nov. 10.

He continued: "Add to this the attempts at sitdowns, slow-downs and other hampering actions in violation of agreements, which represent an attempt by workers to usurp the functions of management in determining what the output should be, and we have wage losses and additional costs that impair management's ability to reach the greatest number of buyers, and particularly to broaden world markets.

"In plans for the advancement of the industry as a whole, management well knows whether it is treating its men fairly, and I find it ready to welcome constructive suggestions, while the workers don't have to be told whether they are giving a fair return for wages paid.

"Helpful cooperation is needed, and outside influences should guide but not dominate actions of either the worker or management."



"Our engineer has ideas . . . he should be promoted to the advertising department."

### Triple Purpose Heater Switch

General Automotive Specialty Co., Inc., 17 West 60th St., New York City, has introduced a new heater switch that operates three ways. It may be used to operate the heater only, the defroster unit only, and will combine the two and operate the heater and the defroster units together. Switches are supplied for either clamp-on or through-the-dash mounting. List price \$0.95.





*I install 'em  
in **SHORTER** time...  
they stay in service  
a **LONGER** time...  
Yes Sir,  
**C&B RODS**  
for mine!*

**CLAWSON & BALS, Inc., 4701-03-07-09 W. Lake St., Chicago**  
 Detroit • Minneapolis • Moline • Dallas • Cincinnati • Denver • New Orleans • Atlanta • Boston • Houston • Milwaukee • Rochester  
 Philadelphia • Oklahoma City • New York City • St. Louis • Pittsburgh • Cleveland • Kansas City, Mo.



*Precision*

**REPLACE  
CONNECTING  
RODS  
IN SETS**

**C&B RODS**

**FOR REPLACEMENT**

### New Braking Measure Device

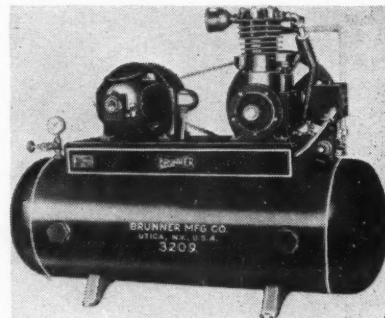
A device which will automatically mark the point on the road where the brake is applied when making determinations of stopping distance is being manufactured by Triangle Associates of Baltimore, Md., and marketed under the trade name Projec-Tell Meter. The apparatus includes the following items: A pavement-marking device consisting of a properly housed revolver loaded with paint-pigment cartridges, which is fired by an electrically energized mechanism, actuated by a contact switch connected to the brake pedal of the vehicle. Current for these devices is furnished by a storage bat-

tery contained in a separate carrying case and having no connection with the regular electrical system of the vehicle.

The revolver, together with its electric firing device, is mounted on a rigid casting, the whole being enclosed in a metal case, through the walls of which the electrical cables are carried. A universal clamping device permits of securing the device to the running board or other part of the vehicle. Attachments for connecting the switch to the brake pedal are provided, as is a cutout switch for insertion in the connecting cord, which permits of disconnecting the pedal switch electrically from the Projec-Tell Meter when not in use.

### New Air Compressor Announced by Brunner

The latest addition to the Brunner line of air compressors is their model 3209, two-stage compressor outfit which is being announced at the



A.S.I. Show. It displaces 6.8 cubic feet per minute, and is powered with a 1½ hp. motor. The new compressor is suitable for the larger garage or filling station where high pressure air is needed for the inflation of bus and truck tires and for air-operated greasing equipment and a lift. The Brunner line of compressors is manufactured by the Brunner Mfg. Co., Utica, N. Y.

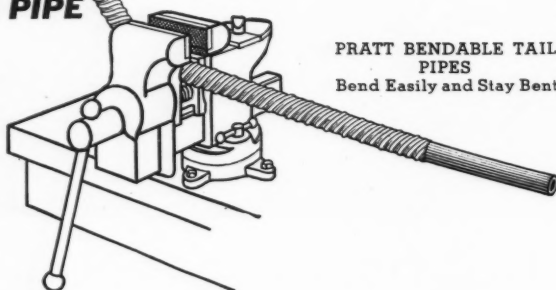
## THE NEW ROAD TO PROFITS—

# PRATT

Replacement Parts  
of Proven Merit

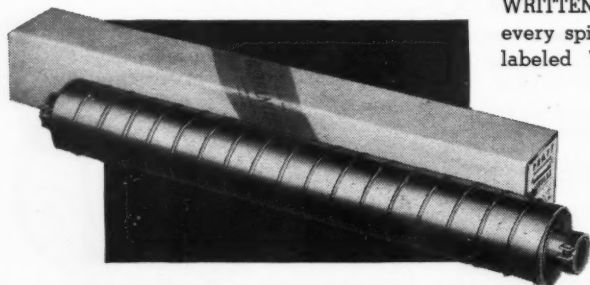
### PRATT Bendable TAIL PIPE

A new and unique replacement part. Two diameters—1½" and 1¾". Three standard lengths—62", 76" and 92". Easy to install. Turns "lost sales" into "profit makers". Available from fifteen separate Company stocks through over 1,000 independent parts distributors.



### PRATT Spiral MUFFLERS

Guaranteed in Writing



Pratt Industries, Inc., gives every user of a Pratt Spiral Muffler one year's unconditional guarantee IN WRITING. This WRITTEN guarantee is enclosed with every spiral muffler and each carton is labeled "This package contains guaranteed merchandise." The Pratt written guarantee is the strongest possible proof of merit a car owner can secure.

Use this convincing merchandising feature to stimulate muffler sales and increase profits.

We cordially invite you to visit our booth No. 112S at the A. S. I. S. in Chicago.

## PRATT INDUSTRIES, INC.

FRANKFORT, NEW YORK

Warehouses in the following cities:

Atlanta  
Boston  
Chicago

Cincinnati  
Cleveland  
Dallas

Los Angeles  
New York  
Omaha  
Portland, Ore.

St. Louis  
San Francisco  
Seattle  
Toronto

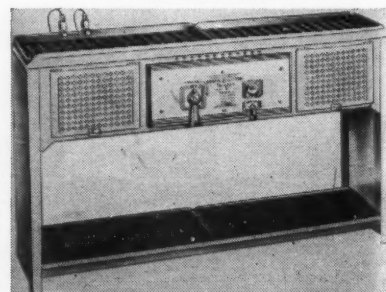
### Hinsdale Tool Catalog Available

The Hinsdale Mfg. Co., 427 West Randolph Street, Chicago, Ill., has recently issued a new catalog showing their complete line of socket wrenches and end wrenches as well as complete kits of tools for mechanics.

All Hinsdale wrenches are made of chrome vanadium steel under hot forging methods, coupled with their electrically controlled heat treatment to insure the greatest possible strength and toughness.

### G.E. Battery Charging Shop

The General Electric Co., Appliance and Merchandise Dept., Bridgeport, Conn., has recently introduced a new G-E Tungar 12-battery Charging Shop. It is housed in a rugged steel cabinet finished in red with a contrasting ivory panel. Compartments on either side of the panel provide space for battery tools, etc. Shelves of the cabinet provide space for 12 batteries which can be charged at a 6-volt rate simultaneously. Net price —\$57.50.





# EVERY 45 SECONDS

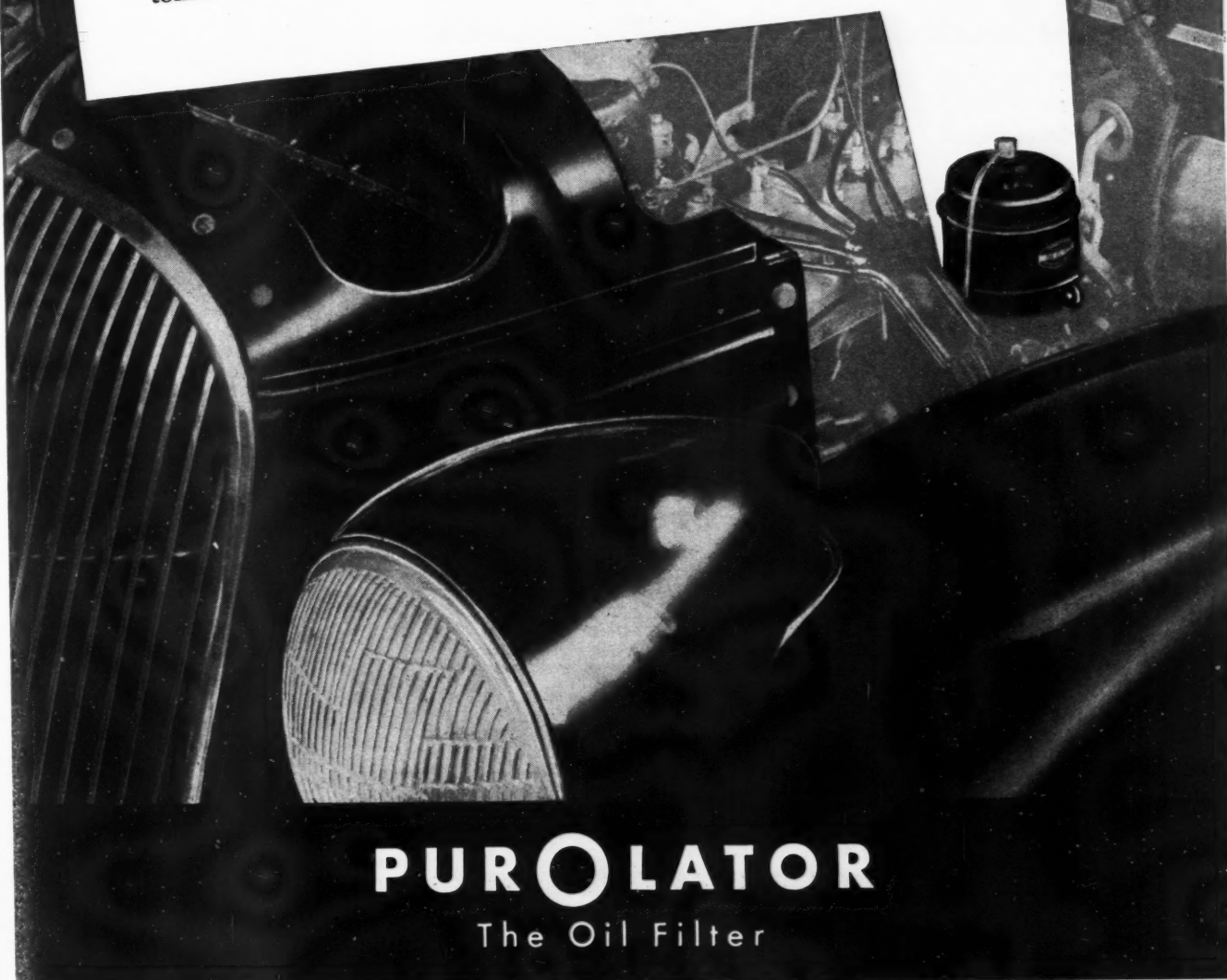
## A Question . . . A Sale

The millions of genuine PUROLATORS on the road today are being renewed at a rate of one every 45 seconds. That's a lot of business, and getting a good slice of it is largely a matter of *habit*.

Every time you raise a hood and see a genuine PUROLATOR ask your customer this one simple question, "How

long since your PUROLATOR has been renewed?"

You'll be amazed at the number of genuine PUROLATOR renewals you can sell, because car owners should, and *want* to keep *genuine* PUROLATOR protection working . . . but they do need a reminder. Motor Improvements Inc., Newark, New Jersey, makers of



**PUROLATOR**  
The Oil Filter

## Petroleum Institute Re-Elects Officers

CHICAGO, ILL.—All officers of the American Petroleum Institute were re-elected at the Eighteenth Annual Meeting of the Institute held November 8 to 12 at the Stevens Hotel. The Executive Committee selected Wichita, Kansas, for the 8th mid-year meeting to be held May 11 to 13, 1938, and the Stevens Hotel, Chicago, for the 19th annual meeting, to be held November 14 to 18, 1938.

Officers re-elected by the Institute are: Axtell J. Byles, New York, president; K. R. Kingsbury, Standard Oil Company of California, San Francisco, vice-president; George A. Hill, Jr., Houston Oil Company of Texas, Houston, vice-president (Production); W. S. S. Rodgers, The Texas Company, New York, vice-president (Refining); C. E. Arnott, Socony-Vacuum Oil Company, Inc., New York, vice-president (Marketing); W. R. Boyd, Jr., New York, executive vice-president; O. D. Don-

nell, The Ohio Oil Company, Findlay, treasurer; Lacey Walker, New York, secretary and assistant treasurer, and J. S. Cooke, New York, assistant secretary.

The Board of Directors recommended a change in the report form for the annual refinery census of the U. S. Bureau of Mines. It also received a progress report from the Board's Committee on Well Spacing. The Executive Committee approved the Institute's budget for the coming year.

## Health Program Costly to General Motors

General Motors Corporation and its operating divisions throughout the United States and Canada will spend more than \$5,000,000 during 1937 to

protect the health of more than 210,000 factory workers on their jobs, Dr. C. D. Selby, medical director, announced Saturday.

This figure includes capital and expense items for medical equipment and hospital facilities, salaries, supplies, physical examinations and surveys to safeguard employees from occupational diseases. A large part of the sum was spent to control dust and fumes in shops and foundries by means of air conditioning and forced ventilation, of which the operation and maintenance alone runs into thousands of dollars annually.

## "Drunkometer" Designed



One of the interesting devices on display at the National Safety Congress in Kansas City, Mo., was the "Drunkometer" devised and operated by R. N. Harger, standing, professor of biology, chemistry and toxicology at the Indiana University School of Medicine. Seated is Trooper H. Waggoner of the Missouri State Highway Patrol, watching the demonstration. The suspect blows his breath into the rubber balloon. The balloon is then fitted over a tube leading into the machine and the air is released. Certain chemicals receiving the breath register the amount of alcohol fumes.

## Build Your Own Welding Equipment

For the shop that wants to build its own welding outfit, Hobart Bros., Hobart Square, Troy, Ohio, has a plan that will enable the shop to do just that. They will supply a new 40-volt welding generator on a 30-day trial offer and easy monthly terms. The shop can pick up or build a chassis, add a good gasoline engine and have a complete, portable welding outfit at a cost considerably under the regular price. Complete instructions for building and assembling are supplied. For complete information and details of the plan, address your letter to Hobart Bros., Box DM-430, Troy, Ohio.

# SPEED UP YOUR SERVICE PROFITS With



## ELECTRO Trouble Shooter

Makes those tough jobs easy by instantly telling you if there is an electrical short, leak or open, then points an accusing finger to the spot. Checks all electrical parts on any car. Gives quick, accurate and understandable report. Will speed up your service profits by helping you do faster, better work, and by bringing you more customers for this scientific tune-up.

### TESTS

Antennas  
Armatures  
Battery Voltage  
Breaker Points  
Brush Holders  
Coils  
Commutators  
Condensers  
Cut Outs  
Distributor Caps  
Electric Chokes  
Electro Locks  
Field Windings

Fuses  
Generators  
Light Switches  
Primary Wiring  
Radios  
Rotors  
Secondary Wiring  
Starter Switches  
Starters  
Suppressors  
Voltage Drop  
Voltage Regulators  
Wiring

MODEL A **\$24.75**  
VANE TYPE METER

MODEL AA **\$27.50**  
GRADE A METER

If Your Jobber Cannot Supply You Write To Us

Manufacturers of Complete Electric Testing Equipment, Arc Welding Equipment & Gas Analyzers



## ELECTRO PRODUCTS CO.

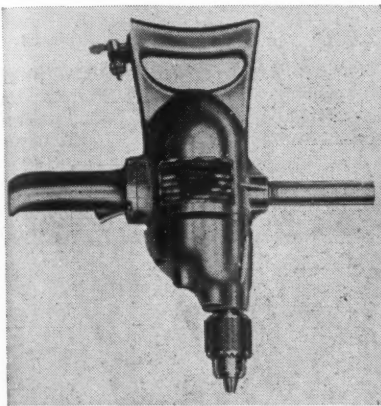
621 East 216th Street, New York, N. Y.





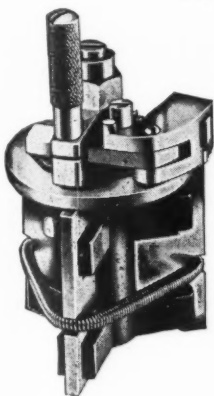
## Electric Drills Added to Van Norman Line

Most recent addition to the comprehensive line of automotive service equipment made by the Van Norman Machine Tool Co., Springfield, Mass., is a complete line of electric drills (priced from \$18.00 up), with a full complement of sanders, grinders, wire wheel brushes and hole saws. These tools are designed for more power,



smoother performance and longer life. New features include new double pole, totally enclosed switches with generous overload capacity, and wider-faced gears. Perfect ventilation is maintained by a centrifugal fan on the armature shaft. Illustrated is the new ½-in. electric drill, Van Norman No. 1116.

## Hastings Has New Ridge Reamer



The Hastings Manufacturing Co., Hastings, Mich., makers of Hastings piston rings and piston expanders, has introduced a new moderate priced ridge reamer. The cutter in the tool automatically follows the ridge regardless of the shape of the

bore and removes the ridge completely and safely. A special feature of the reamer is that it stops cutting when the ridge is removed.

## Tri-State Show

The fourth annual Tri-State Automotive Industries show for western Pennsylvania, eastern Ohio and West Virginia will be held at Motor Square Garden in Pittsburgh, Pa., March 15, 16, 17, 18, 1938, according to George A. Ley, secretary.

All automotive jobbers in the tri-state area have been asked to co-operate.

The following wholesalers operating in over 50 cities in the tri-state territory are included in the participating jobbers to date: Airland Motor Parts

Co., Auto Parts Co., Bendix Westinghouse Co., Craig Motor Service Co., Dyke Motor Supply Co., Iron City Electric Co., Miami Rubber Co., McKeesport Auto Parts Co., Motive Parts Co. of Penna., Pennsylvania Rubber & Supply Co., Pitt Auto Electric Co., Pittsburgh Auto Equipment Co., Rutledge Equipment Co., Sipe Auto Parts Co., Superior Auto Accessories Co., Superior Motor Parts Co., S & R Grinding & Machine Co., West Penn Oil Equipment Co., Wilcox Bros., Joseph Woodwell Co., Wykes Auto Parts Co.

The show is being sponsored by Automotive Maintenance Industries, Inc., as in previous years.

## G & J Announce New Tube

The G & J Big Six Classic tube—a new, heavy-duty passenger car inner tube, has recently been announced.

It is constructed of heavy gage, heat-resisting rubber throughout, and in addition has a new pinch-proof, two-ply base, providing greater resistance to abrasion, rust and corrosion on the rim side.

Extra safety from blowouts is provided in this tube by its patented channeled construction, which eliminates sidewall blisters caused by air trapped between tube and casing. The Big Six Classic tube is made in full size, circular molds.

**MOTORISTS EVERYWHERE SAY:**

*"Blow our cars' noses"*

**MASTER AIR STRAINER CLEANER**

**BLOW YOUR CAR'S NOSE EVERY 2000 MILES**

**THIS LARGE POSTER Free WITH EACH UNIT**

**HAWLEY MANUFACTURING CO., INC. CHESTER, PA.**

Don't disappoint them. Don't disappoint yourself. Car "nose-blowing" (pressure-cleaning of air strainers) with the Master Air Strainer Cleaner gives you the neatest profit you've run into in a long while. There's been no service so new and so attractive in 10 years!

You do an air strainer cleaning job in a few minutes with the Master. You collect \$.50 or more for every job. Yet the Master costs you only \$19.75—pays for itself in less than a month.

Your customers go away delighted with the engine economy and smoothness which a clean air strainer gives them. They come back for another Master job every 2,000 miles. And the attractive merchandising and display helps supplied with every Master unit bring new customers to your shop.

## Tenth Anniversary

Rosey's Auto Parts, Inc., Lancaster, Pa., held its tenth anniversary party at Moose Hall, Lancaster, on Nov. 8. The party was well attended by the trade from all parts of the territory served by the company. Although the affair was largely a social occasion it was featured by announcement and inauguration of the Thermoid Brake Shoe exchange plan.

## Phila. Maintenance Show

Set for March 1st

The Philadelphia Automotive Maintenance Demonstration, sponsored by Auto Gear & Parts Co., Berrodin Auto Supply

Co., Casanave Supply Co., Gaul Derr & Shearer Co., Helmbach Auto Supply House, J. H. McCullough & Son, Phila. Motor Accessories Co., E. P. Rotzell Co. and Westinghouse Elec. Supply Co., will open on March 1st, 1938, and continue through March 4 and will again be under the management of Charles H. Bauer.

Ample provision is being made for all jobbers located within the trading area, to visit the show. This will give the manufacturers the opportunity of demonstrating their equipment to full advantage not only to the sponsoring jobbers but to all jobber prospects as well.

## Rinn Resigns from Rotzell Co.

Al Rinn, manager of the mechanical department of E. P. Rotzell Co., Philadelphia, for a number of years, has resigned, and expects to join some

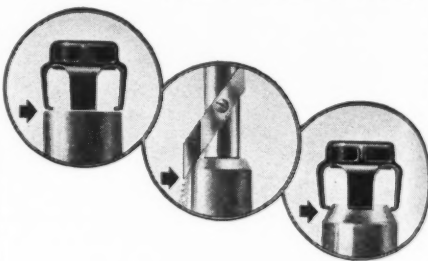
other jobber in the East needing an experienced manager and merchandiser of machine shop services.

Mr. Rinn formerly was the owner of the American Grinder Co., Philadelphia, until it merged with E. P. Rotzell Co., and before going in business for himself was manager of the Philadelphia branch of the Houpert Machine Co., Long Island City, N. Y.

He is recognized in the East as one of the best-informed men on automotive machine shop work.

## Valve Stem Packing Tools

The Wilkening Mfg. Co., 2000 South Seventh-first Street, Philadelphia, Pa., makers of Wilco Valve Stem Packing, has introduced special tool equipment to permit installing their packing in those cases where the end of the valve guide is not beveled but is square. Inserted in the valve guide for accuracy,



and revolved, the cutter bevels the top of the guide the desired amount so that the prongs of the Wilco packing will slide down on the sides of the guide into its proper position. Supplied in 5/16 in., 11/32 in. and 3/8 in. sizes, the complete set that will take care of all installations is priced at \$1 net to the dealer.

# ARROW LEGALLY APPROVED SAFETY DEVICES

Jobbers choose the Arrow Line because Arrow merchandise is easy to sell. It is legally approved. It is advertised. It is profitable.

Fleet operators choose Arrow Signals, not just to meet the law, but to add permanent safety to their trips.

## Booth S-387

DIRECTIONAL SIGNALS

MARKER LIGHTS

SAFETY FLARES

DRIVING LAMPS

**ARROW SAFETY  
DEVICE COMPANY, INC.**

MEDFORD, NEW JERSEY

ask your  
jobber



**Granddaddy** of modern spark plugs is the one held in the right hand of the girl above. Appearing at the first Auto Shows, it contained its own coils and weighed a pound and twelve ounces. Compare it with the Champion model plane plug held in the girl's left hand.



## U. S. Battery Has Special Features

A new "U. S." battery, featuring giant plates and triple sealed case construction has been announced by U. S. Tire Dealers Mutual Corp., 1790 Broadway, New York City. The new giant plates are said to have up to 26 per cent more power-generating surface, providing quick starts, long life and a large power reserve. One-



piece, acid proof, triple sealed case construction keeps the battery clean and dry, while the scientific design provides more space, more acid and more plates.

## Williams Wrench Booklet Available

The J. H. Williams & Co., 75 Spring Street, New York City, N. Y., has recently issued a booklet entitled "How to Select and Use Wrenches," which contains valuable information on how to select the proper wrench for a specific job. In addition, it contains general catalog listings of many popular types and sizes in the Williams' wrench line for automotive use. A free copy will be sent you upon request.



"... but officer, they told me I could drive as fast as I want to after it was broken in!"

## Bendable Metal Tubing

A spiral metal tube which can be readily bent without the use of tools, dies or forms is being offered the automotive field by Pratt Industries, Inc., Frankfort, N. Y. It is an adaptation of the firm's patented stiff spiral tubing which has been manufactured by it for a considerable number of years. By introducing a V-shaped bead in the flat between the ribs of the tube, a pipe is obtained which can be readily bent by hand by holding it in a vise as indicated by the illustration. It is stated that the pipe is in no sense flexible and will retain the shape to which it is bent.

## Method of bending Pratt bendable pipe

One of the possible applications of this bendable pipe in the automotive field is said to be to buses and similar vehicles, where it is often desirable to extend a muffler tail pipe to the extreme rear. Usually the quantities involved are not sufficient to warrant the making of special forms with which to bend ordinary steel pipe to the desired form, hence this new type of pipe comes in handy.

## New Skilsaw Catalog

A new catalog has been issued by Skilsaw, Inc., 3310 Elston Ave., Chicago, Ill. It covers their complete line of portable electric tools,



# WHAT!!! No Rabbits out of the Hat for 1938?

*Not a one, Mr. Automotive Man!  
'The Oldest Name in Brake Lining'  
believes that profits are made from  
a sound product and sound planning  
—not by hocus-pocus!*

**J**OHNS-MANVILLE is today producing the finest brake lining in its half century of experience —as fine as the world's largest brake lining research laboratory and the most complete manufacturing facilities can make it.

Motor-car manufacturers, jobbers and servicemen alike have placed the stamp of unqualified approval on our present line of products. One Johns-Manville

factory alone is turning out more than 12 miles of a single type of J-M Brake Lining a day to keep pace with the demand.

No, we're not pulling any rabbits out of the hat for 1938! We're going to keep right on supplying you with these same fine materials, because we believe that this is the best way we can assure you of the profit you should rightfully make.

☞

*We're sure you will like our policy and agree that it will help you make more money in Brake Lining during 1938. Write Johns-Manville, 22 E. 40th St., New York, for full details.*



# JOHNS-MANVILLE

## The Oldest Name in BRAKE LINING

### Victor Adopts New Style of Listing Grease Retainers

In a new listing of grease retainers and oil seals the Victor Mfg. & Gasket Co. has originated a new style of showing the grease retainers for different models and years of cars. This new style enables the buyer to name, at a glance, the desired items for front wheel, rear axle outer, rear axle inner, and pinion.

By listing these four retainer applications in four columns opposite the car year and model designations, much of the "digging" necessary to get information from previous listings has been eliminated. For added convenience,

there is also a listing of retainers numerically and another by size.

Copies may be obtained by writing to the Victor Mfg. & Gasket Co., P. O. Box 1333, Chicago, and specifying "Retainer List No. 27."

### Buick November Production Raised

Demand for Buick cars during October was such that a shortage existed in some models necessitating an upward revision of production schedules at the factory for November, it was disclosed by W. F. Hufstader,

general sales manager. Buick's sales for the month, he said, were 18,009 units, paralleling the best month of this year, and an increase of 7828 cars, or approximately 77 per cent over the corresponding month a year ago. In October last year, 10,181 Buick cars were delivered at retail in the United States.

Indicative of a sustained demand, the executive said, is that deliveries during the last 10 days of October reached 7439 units, with unfilled retail orders mounting. This compared with 6067 in the last 10 days of October, 1936.

Used car sales for the 10-day period were 10,476, he said.



**THERE'S** a real wallop back of Kem's 1938 Business Building Sales Plan—a bona fide program for stimulating sales and boosting profits.

#### Here's the Set-up:

**DEALER LECTURE COURSE** Given **ABSOLUTELY FREE** to any service station enrolling as a regular "Kem Dealer"—12 Courses compiled by automotive engineers, for **PRACTICAL SHOOTING ON HIGH SPEED MOTORS**. A valuable help to the mechanic in locating trouble and showing him how to correct it.

**ADVERTISING AND SALES PROMOTION** Kem's intensive Advertising Campaign in leading trade papers and direct mail creates hundreds of inquiries which are backed by missionary work and sales demonstrations at specially arranged conferences with Jobbers' Salesmen.

**THE "REGISTERED" KOMET LINE** Kem's latest achievement. Longer life and extra wear are built into each part. All parts **PREFITTED ELECTRICALLY AND MECHANICALLY**, and backed by Kem's "Registered" Guarantee.

*For further particulars*

See us at the Chicago Show  
**BOOTHS N-150-152-154**

**OR HOTEL SHERMAN**

**KEM MANUFACTURING CO., INC.**

601 West 26th Street

New York City

### Oakite Has New Cleaner

Oakite Products, Inc., 22 Thames St., New York, N. Y., has announced an improved type of oil soluble emulsifier which is said to quickly remove oil, grease and dirt from motors, chassis and garage floors in a cold solution. It is used with either kerosene or a light fuel oil. An outstanding feature claimed for Oakite composition No. 9 is, that when it is rinsed off it leaves no greasy or insoluble oily deposits. It is also effective for removing carbonized sludge deposits from the inside of automobile motors. For complete information and directions covering a variety of uses, write the manufacturer.



**Home Made** motor scooter built by R. McCleary of Albuquerque, N. M. It is powered by a stripped washing machine motor with advanced spark and raised compression. The frame is of thinwall conduit.

The builder claims a speed of thirty m.p.h. and one hundred miles per gallon of gasoline.

### Oilzum Flushing Oil New White & Bagley Product

A new flushing oil under the brand name Oilzum has been introduced by the White & Bagley Co., 100 Foster Street, Worcester, Mass.

Oilzum flushing oil is said to be a special blend of solvents and oil made particularly to dissolve and clean out the different types of gums and deposits which form in the differential of a car. It is supplied in 5 gal. pails and also in 30 and 55 gal. drums.



## Rain-Master Wiper Blades

The Anderson Co., Gary, Ind., makers of Sleet-Master and Spot-Master windshield wiper blades, has added a new name to their list of products. The newcomer is the Rain-Master, a



wiper blade using 10 wiping edges. It is supplied in an attractive counter display case, illustrated, which features the "Vision-Control Set" idea which has been promoted by Anderson for the past several months.

## Electrical Service Parts

A complete line of small-hardware assortments, intended for electrical, radio and automotive service shops and for home use by amateur craftsmen, has been brought out by the Insuline Corp. of America, 25 Park Place, New York, N. Y. The parts are supplied in indestructible flat metal boxes having hinged lids and 12 individual compartments, the following assortments being available: master screw and nut assortment, all purpose radio hardware and equipment, insulated washers and grommets, and master miscellaneous assortment, consisting of rivets, lugs, washers, etc.

Insuline also announces a line of square-type glass jars with screw caps, filled with individual hardware items such as screws, nuts, washers, rivets, etc. A total of 81 different items is available. These jars stack neatly on shelves and keep their contents clean and free of dust. For counter display purposes, dealers are furnished gratis with a decorative metal rack holding 36 of these jars.



"You'll have to wait a few minutes 'til my wife finishes making the waffles on the vulcanizer."

## New Lubricating Agent

The Lubco Corp., 671 W. Washington Blvd., Chicago, has announced the development of a new lubricant addition agent known as "Stream-Liner" for use in engine lubricating oil. "Stream-Liner" is a compound of of jelly-like consistency merchandised in collapsible tubes. It is added to the lubricating oil through the oil filler pipe and is said to result in lower gasoline and oil consumption. Its action is to form a "Fluid Bushing" around bearing surfaces due to the electrolytic attraction of the particles of "Stream-Liner" to the metallic surfaces. It is claimed that this semi-

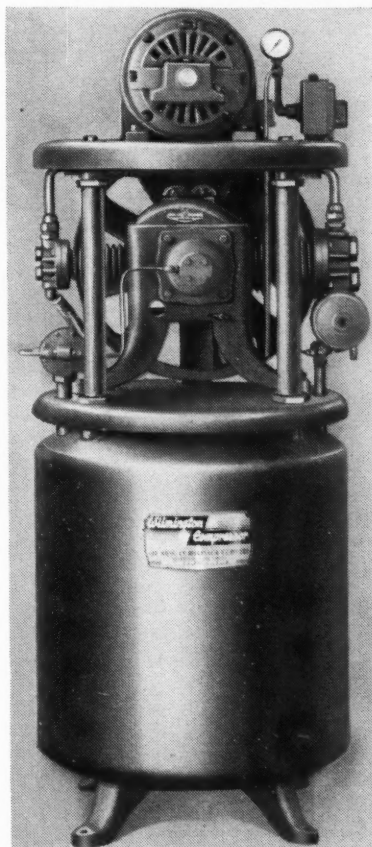
fluid oily layer does not drain off or leave the surface when the motor is stopped but remains in place and provides instant lubrication. For complete information write the manufacturer.

## New Distributors for Hypressure Jenny

The following companies have been appointed distributors of Hypressure Jenny, a patented steam vapor spray cleaner which is a product of the Homestead Valve Mfg. Co., Inc., Corapolis, Pa.; The Gibson Co., 433 N. Capital Ave., Indianapolis, Ind.; The Keyes Co., 115 W. 5th St., East Liverpool, Ohio; Minneapolis Iron Stores Co., 512 N. Washington Ave., Minneapolis, Minn.; Dyke Motor Supply of Akron, 372 S. Broadway, Akron, Ohio, and Canton Hardware Co., 122 3rd St., N.W., Canton, Ohio.

# LEADERSHIP Is Not A Matter of Luck

Leadership is a goal achieved through successful experience in the field. Nothing can take the place of experience—and our 34 years of service to the automotive industry has given the trade absolute dependability in *Wilmington Compressors* and has brought us gratifying leadership in our chosen sphere.



Model K Two Stage

## WILMINGTON COMPRESSORS

are modern in design, yet compact in size and shape—have no projections on sides—are free from vibration—easily controlled and checked—belt adjustments made quickly and accurately—no moving parts to catch clothes—operate efficiently and economically.

WILMINGTON COMPRESSORS have a high nickel cast iron, heat treated pump casting—drop forged crank shaft—semi-steel, three-step cut piston rings—extra large Timken roller bearings—splash oil system—Two V type belt drive—disc type valves—combination air filter and silencer—non-pulsating check valve—centrifugal type unloader—undervoltage and overload relays on every motor—automatic pressure switch control—copper-finned, cooling coil.

Send for Catalog.

**The Auto Compressor Company**  
S. Mulberry Street, Wilmington, Ohio



# THE BOYS CALLED HER "Miss AIR- AND-WATER"

*-BUT SHE'S CASH  
BUSINESS NOW!*



SURE, "water customers" don't pay the rent, but smart service station men aren't sitting back and cussin' them. They're converting 'em.

The first chance they get, they tell about Ethyl—the fuel that contains more anti-knock fluid\* than the best regular-grade gasoline. They hold out the promise of savings on gas and oil, more power, smoother running, less gear shifting on hills. It's a rare driver that won't ask "How?" The answer is simply "Fill up at our Ethyl pump. Then go to your car dealer and have him adjust the motor for maximum performance."

When they do this, mister, you've got customers for life! They'll be so pleased when you show them they own a better car than they thought, that they'll come to you *first*—even for oil, tires or accessories. Why not try it?

\*Containing tetraethyl lead

**A BETTER RUN FOR THEIR MONEY**

## MAKE FRIENDS WITH





## THIS VULCANIZER WILL HANDLE ALL TUBE JOBS!

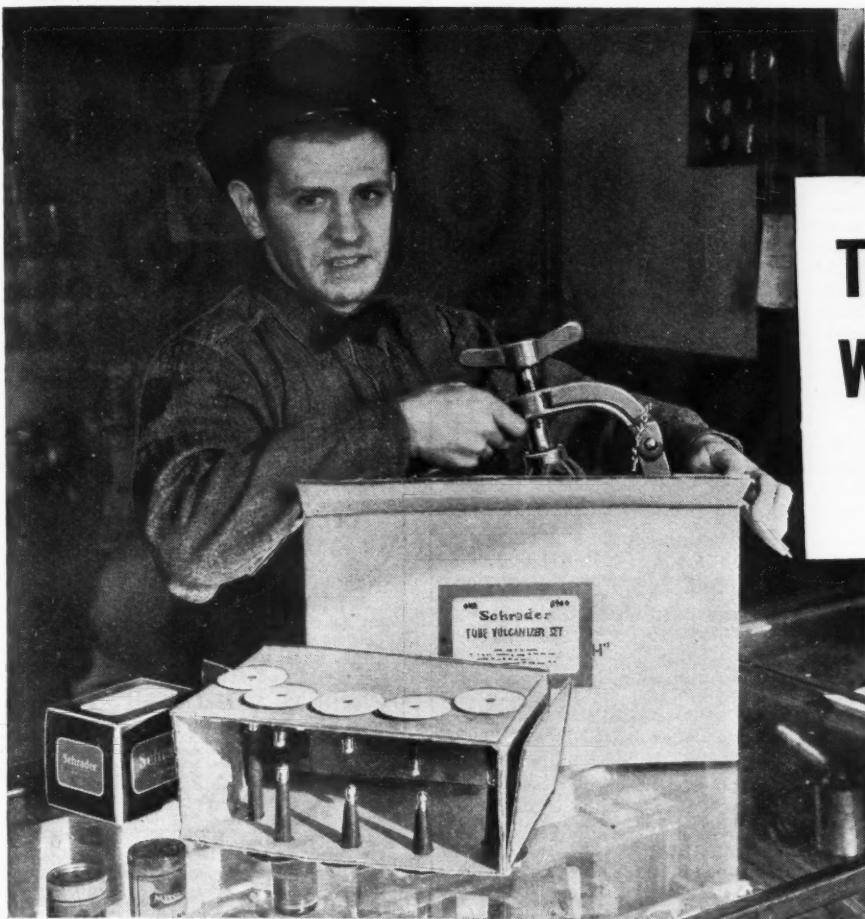
From bicycles to trucks, the Schrader Tube Vulcanizer will handle all sizes of standard replacement tire valves and Shaler "Hot Patches."

There are so many advantages to the Schrader Tube Vulcanizer—the heat units are scientifically designed to reach the exact temperatures necessary for perfect jobs—it requires no attention—has no electrical element to burn out—will not over-cure, or under-cure—no installation problem.

You'll find out how useful it is when you put your Schrader Tube Vulcanizer Set to work.

**A. SCHRADER'S SON**

Division of Scovill Manufacturing Company, Inc.  
BROOKLYN, N. Y.



### Set consists of:

- 1—No. 8900 Schrader Tube Vulcanizer.
- 2—No. 15 RH Valves with Heat Units.
- 3—No. 25 RH Valves with Heat Units.
- 3—No. 35 RH Valves with Heat Units.
- 2—No. 50 RH Valves with Heat Units.
- 1—Tube Roughener.

**HEAT UNITS IN SEALED ENVELOPES  
FURNISHED WITH ADDITIONAL VALVES**

Sold by leading auto-  
motive wholesalers  
everywhere.

**COMPLETE SET ONLY**

**\$5.00**

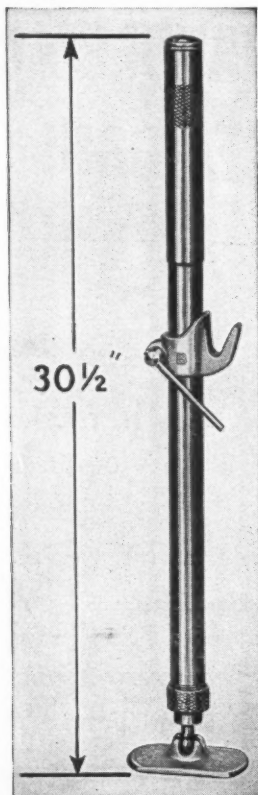
(DEALER PRICE U. S. A.)

# Schrader

REG. U. S. PAT. OFF.

## TUBE VULCANIZER SET

# A "NATURAL" for Christmas



Pat'd Dec. 15, 1936—Other Pats. Pending

## THE ACE-HY HYDRAULIC BUMPER JACK

START NOW to suggest this Man's Gift — and watch sales climb — because it's a practical gift that will appeal to every car owner.

Ace-Hy is the Modern Jack for the modern car—No kneeling—No crawling under car—No projecting levers—Nothing to put together.

You can build WINTER SALES with Ace-Hy—start now by getting that Christmas business with the ideal Christmas gift.

PRICE \$6.95  
Pacific Coast \$7.50

**VULCAN MFG. CO.**  
SAINT PAUL, MINN.

## 1937 Automotive Tax Bill Placed at \$1,550,000,000

Automotive taxes will hit a new high of \$1,550,000,000 in 1937, or nearly \$125,000,000 more than in 1936, it is estimated by the American Petroleum Industries Committee. Less than \$1,000,000,000 of that money, however, will find its way to road funds. The bulk of these payments, \$1,145,000,000, will go to state governments in the form of gasoline taxes and registration fees. The federal government will receive as its share approximately \$330,000,000, of which nearly two-thirds will be derived from the duplicating federal tax on gasoline.

Following is a summary of estimated 1937 tax burden on motor vehicle owners:

State gasoline taxes....	\$770,000,000
State registration and misc. fees .....	375,000,000
Federal gasoline taxes..	200,000,000
Other federal automotive taxes .....	130,000,000
Personal property, city and county taxes.....	75,000,000

Total .....\$1,550,000,000

These tax costs to motorists would have been reduced by more than one-third if the original principle of automotive taxation had been adhered to in determining these costs. This principle, the committee explains, is that automotive taxes are levied to pay the cost of construction and maintenance of highways. The committee calculates that only \$965,000,000, of the \$1,550,000,000 of automotive taxes will find its way to road funds.

Federal taxes paid by motorists, the committee points out, are not earmarked for roads. These taxes were imposed in 1932 as a "temporary emergency" measure to offset dwindling federal revenue. Since that date federal revenue has reached levels far above their pre-depression peak, yet automotive taxes have been continued.

Approximately \$1 out of every \$6 collected from motorists by state governments is not being spent on roads, the committee continues. Such diversions this year will reach a total of close to \$180,000,000. Personal property and automotive taxes paid to local governments will also be applied to non-highway purposes, bringing the total of automotive taxes not earmarked for roads to an estimated \$585,000,000.

Radiator, Battery Repairing and all sorts of soldering jobs easily done with

**TORIT**

**ACETYLENE TORCH No. 23**

Simply connect to Presto tank. Price, including a set of 4 tips, \$6.75. Order from your jobber.

**TORIT MFG. CO.**

290 WALNUT ST., ST. PAUL, MINN.



## K&M Super Tension BALLOON TYPE WIPER BLADES

Outlast — Outwipe — Outsell  
any other blade

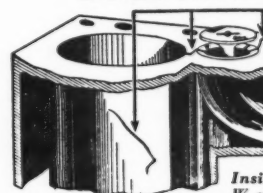
ASK YOUR JOBBER FOR  
K&M ASSORTMENT DEAL NO. 25

Includes 24 complete blades in 2 size lengths individually packaged in display carton.

ONE K&M HAND SQUEEGEE FREE  
Your Cost \$5.04—Your Profit \$3.63

**KINNEY & McLAUGHLIN CO.**  
AKRON, OHIO

## WONDER WELD SAVES 29 1/2 HOURS



Takes only 30 minutes of old 30-hour repair shop weld for fast, permanent seal. Beware of imitations. Wonder Weld, like all good products, is being copied. Insist upon genuine Wonder Weld for Guaranteed results.

**MILLER MFG. CO.**

1220 KAIGHN AVENUE

CAMDEN, N. J.

## SEALED POWER PISTON RINGS

Best in  
Old Cars!



Best in  
New Cars

## OUR RIGID INSPECTION IS YOUR PROTECTION

FOR SAFETY USE

Genuine  
**Maremont**  
ALLOY STEEL  
Springs

SINCE 1911

THERE'S A DIFFERENCE IN SPRINGS TOO!



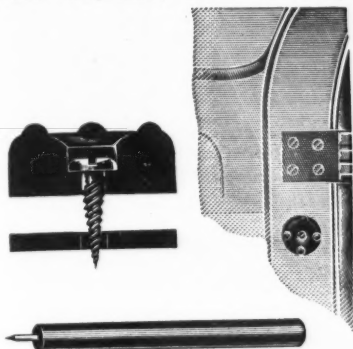
Write for Catalog and Name of Nearest Distributor

MAREMONT AUTOMOTIVE PRODUCTS INC. Dept. AM So. Ashland Ave. at 17th St., Chicago



## Champion Announces New Door Silencer

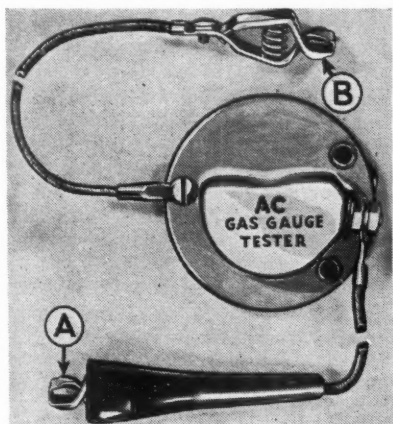
An improved door silencer that can be installed on all cars at every place a muffler is required, has been announced by the Champion Anti-Rattler Co., Inc., 1935 Washington



Ave., St. Louis, Mo. The silencer is molded of high grade rubber and is attached by a self-threading gimlet point screw. Special rubber shims are furnished so that any desired height or thickness may be obtained.

## AC Gas Gauge Tester

A gasoline gauge tester has just been developed by engineers of the AC Spark Plug Co. It is designed to properly service AC electric gasoline



gauges both dash and tank units without removing them from the car. List price \$1.50.



"Sure, I know what I'm doing. I'm breaking in a new car."



## When You Divide Profits YOU LOSE MONEY

...again and  
again we say—  
Don't BUY  
Labor...  
SELL IT!

EVERY time you send a Carburetor or Fuel Pump to another shop for reconditioning you cut off a big hunk of your profits and hand it to "the other fellow." You can't get rich paying the wages of another man's employee. That's "buying labor."

To make money, don't BUY labor, SELL IT! Keep the profits at home by doing this work in your own shop! It's a cinch with

## HYGRADE'S "Contain-All" Kits For CARBURETORS & FUEL PUMPS

These inexpensive little kits "contain all" the parts for complete reconditioning. If you don't know what's wrong simply clean out the old housing and give it a new set of "internals." No fussing, no worries. Hygrade has thought it all out for you—giving you the chance to do a bang-up job in double quick time—keeping the profits you are entitled to!

Write for full particulars and catalog.

HYGRADE PRODUCTS CO., 516 W. 34th Street, New York



SERVICE PARTS FOR:  
Carburetors, Fuel Pumps,  
Speedometers, Shock Absorbers,  
Temperature Gauges, etc.



## Yankee LIGHTING IS Safe LIGHTING\*

INSTALL Yankee lighting  
equipment in your trucks

and know that your truck lighting problem is solved safely, efficiently, economically. For Yankee has been manufacturing automobile lighting devices for over 23 years, and backs these products with its guarantee against mechanical defects.

\*Yankee manufactures all items of lighting equipment required by the I. C. C.

**YANKEE** METAL PRODUCTS CORP.  
NORWALK, CONN., U. S. A.

Write for illustrated catalog "E" describing other Yankee truck lighting equipment.



Get the Jump on the  
Trade with a —



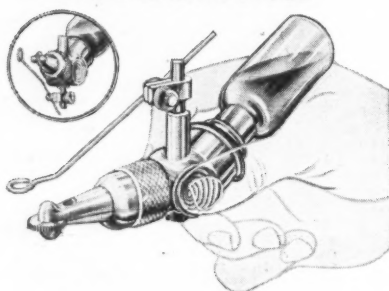
### FOR THE MODERN PAINT SHOP

Repaint jobs require stripes or the job is flat and unattractive, regardless of the expense of labor and material involved in the painting. Hence, get the jump on the trade by using the MASTER Stripping Tool for your stripping work.

### INCREASES PROFITS

Every Feature You Could Want In A Striper You Will Find Built Into The Master

### IT'S EASY TO USE



### A Tool For Every Size Paint Shop

Eight stripe widths, 1/64" to 3/16" Gravity and force feed types. Prices, \$1.50, \$2.50, \$4.50, \$5.50 and \$8.50. Order from your jobber or write us for complete details.

### WENDELL MFG. CO.

2533 N. Ashland Ave., Chicago, Ill.

### Photo-Chek

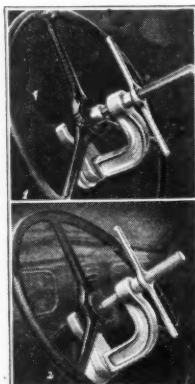
### Service Continued

Continuing a program inaugurated in 1937, the Photo-Chek Service will prepare Photo-Chek pictures covering every 1938 car model in attractive book form. Entitled "How Can You Be Sure?" the visual merchandiser will be available in January. This is an expansion of the lubrication chart and information service developed by the Chek-Chart Corp., Chicago.

### Snap-On Steering

### Wheel Puller

Snap-On Tools, Inc., Kenosha, Wis., has developed a steering wheel puller with adapters so that it can be used on any type of steering wheel. It is of "C" clamp construction, is supplied with a narrow and wide fork which are protected to prevent injury to steering wheel hubs. List price, \$9.00.



### L-L Carburetor

### Parts Cabinet

The Langskenkamp-Linkert Carburetor Co., Indianapolis, Ind., has developed a parts cabinet for servicing Stromberg and Carter carburetors which provides a selection of popular replacement parts in a drawer cabinet carefully indexed for quick service. The parts selection is up to date and covers the popular models from 1925 to 1938.

## Handy BATTERY CHARGERS

LOWER OPERATING COST  
MEANS MORE PROFIT FOR  
YOU. No. 12-B Wall type.  
12 Battery size. \$29.50  
Price, without bulb

WRITE for Bulletins on complete line.

BALDOR ELECTRIC CO.  
(Electrical Mfrs. for 17 years)  
4375 Dunbar Ave., St. Louis, Mo.  
GUARANTEED for 2 YEARS



1937

1937

### YOU MAKE MONEY SELLING PRAIRIE-SCHOONER TRAILERS

\$295

Equipment  
Extra

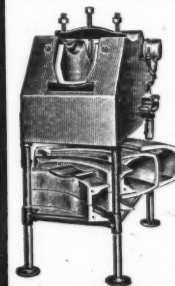
Clean sales. No  
trade-ins. Liberal  
discounts. Right  
price range. Write  
for details.

\$425 and  
up  
Fully  
Equipped

Prairie - Schooner Trailer Co.  
Elkhart, Indiana

### Get the Facts about this

### COMPLETE VULCANIZING PLANT in 1 MOLD



An efficient mold that produces perfect vulcanizing. Handles wide range of tire sizes. Perfect insulation—low operating cost. For gas, electric or steam line. Fully guaranteed.

CHASE MFG. CO.  
3200 Delmar Bl.,  
St. Louis, Mo.

Write for Prices

### CLASSIFIED ADVERTISING

INVENTORS—Protect your rights. Before disclosing your invention to anyone send for free blank form "Evidence of Conception" and instructions. Personal attention given all cases.

Lancaster, Allwine & Rommel, 415 Bowen Building, Washington, D. C.

Motor Temperature Gauges repaired \$1.50. Missing parts replaced. Originators of this

service. Factory Methods. Radiator Shutter Thermostats repaired \$2.50. United Speedometer Repair Co., Inc., 436 W. 57th St., New York City.



### Bigger Profits in Tire Grooving

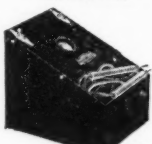
New Champion Stand cuts all hand grooving costs up to 40%. Tires quickly mounted and released. Revolve toward operator. Held by pawl and ratchet. Operator's hands free to groove. Cut long grooves all around tire in less time than minute. Built for long, hard service. Write for illustrated folder which also describes the Champion Groover, with exclusive features, one hand control, removable element. The two Champions are a money-making combination. Write today!

O. E. THOMPSON & SONS  
505 RIVER ST.  
YPSILANTI, MICH.

### ADLER IGNITION INSTRUMENTS ACCURATE — LOW COST



Complete with  
instructions \$3.95



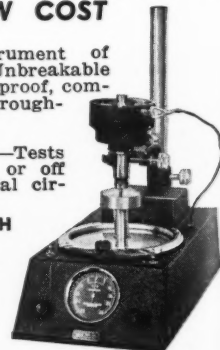
Complete with  
instructions \$9.00

● SYNCHROMETER  
Ignition timing instrument of PROVEN MERIT. Unbreakable chrome plated case. Shockproof, compact, highest quality throughout.

● CIRCUIT ANALYZER  
—A Real Trouble Finder—Tests condensers and coils on or off car. Checks all electrical circuits and units on car.

● IGNITION OSCILLOGRAPH  
USING NEW SCANNING DISC SYSTEM FOR—Checking and adjusting all types ignition distributors.

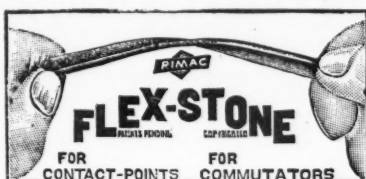
ALL INSTRUMENTS FULLY GUARANTEED  
See your jobber or write  
ADLER MANUFACTURING COMPANY  
NORTH CHICAGO, ILL.



COMPLETE—\$85.00  
with instructions



## THE STONE THAT BENDS!

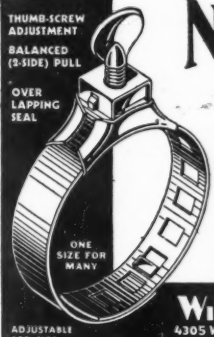


Flexstone is a thin, hard, flexible stone. Not brittle. It cuts and dresses the hardest of Tungsten Points that no steel file can "take". It bends into awkward corners.

**Durable • Waterproof  
Inexpensive**

**Ask Your Jobber**

**RINCK-McILWAINE, Inc.**  
16 Hudson St. New York City



THUMB-SCREW  
ADJUSTMENT  
BALANCED  
(2-SIDE) PULL  
OVER  
LAPPING  
SEAL

**TRADE MARK**  
**NOCO-OUT**  
**HOSE CLAMPS**  
THE HOSE CLAMP WITH  
THE THUMB SCREW

Standard equipment of the  
automotive industry. Ad-  
justable—one size equals  
many. Quick tightening,  
perfect seal. Makes radi-  
ators and heaters "Anti-  
Freeze" tight.  
Stock up now and be  
ready for the first cold  
snap. AT ALL JOBBERS.

**WITTEK MFG. CO.**  
4305 W. 24th Pl., Chicago, U. S. A.

## TRUCUT TAILSTOCK REST



Also mfrs. of TRUCUT  
Commutator Lathes and  
Mica Undercutters. Com-  
plete details on request.

**FRANK N. WOOD CO.**  
WAUWATOSA, WIS.

## Heads Continental

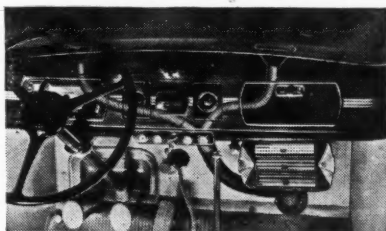
### Piston Ring Sales

The St. Louis Spring Company announces that Louis Emrich, recently an executive of the Continental Piston Ring Company, has joined its piston ring division in charge of sales.

Mr. Emrich has been active in the piston ring industry for many years and will begin an active sales promotion campaign on behalf of Moog-St. Louis piston rings. The company manufactures a complete line of factory duplicate and inner spring type rings.

### Chanson Heaters Feature "Pointed Heat"

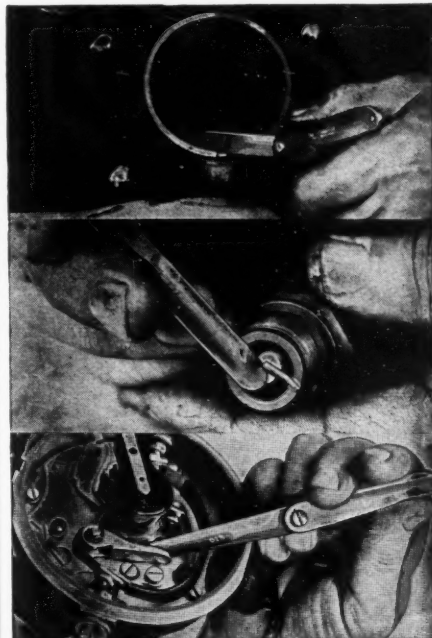
The Chanson Div. of the Illinois Iron & Bolt Co., Carpentersville, Ill., has announced a new line of heaters for 1938 featuring "Pointed Heat." The heater is mounted on a swiveled



bracket so that the flow of heat can be pointed in any direction desired. The heaters are equipped with defroster outfits with special attachments available for cars that are not built with defroster slots beneath the windshield.



**Tire Soles**—Last year's junked tires may, at this moment, be rubbing bunnions on the feet of a goat herder in Turkey. According to records of California Bank, Los Angeles, old tires are regularly shipped to foreign countries where they are fabricated into inexpensive long-wearing sandals.



## STARRETT FEELER GAGES

Starrett hasn't missed a single bet in the Thickness Gage or Feeler Stock line. If you like 'em long or short, with a wide range of leaves or just the sizes for a specific job, you'll find that Starrett makes a gage that suits you to a "T". See them at your Auto Supply Dealer's. Starrett Automotive Tools Booklet "G" tells how to do profitable precision repair and overhaul jobs. Free on request.

### THE L. S. STARRETT CO.

*World's Greatest Toolmakers*  
Manufacturers of Hacksaws Unexcelled  
Steel Tapes—Standard for Accuracy  
Dial Indicators for Every Requirement  
**ATHOL, MASS., U. S. A.**

*Unconditionally  
Guaranteed*

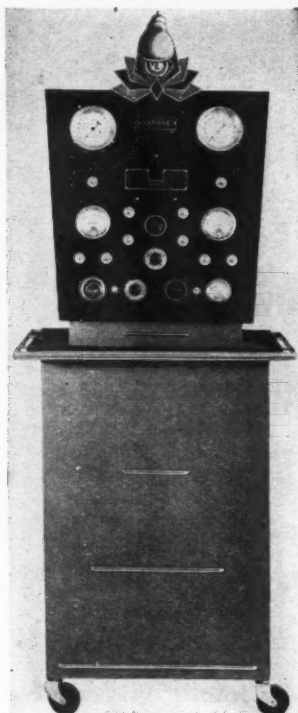
MUFFLERS  
TAIL PIPES  
AXLES • GEARS  
CYLINDER HEADS  
CLUTCH PLATES



UNIVERSAL PARTS, INC. CHICAGO

**Use  
Starrett  
Tools**

# LANOKE



Model No. III Motor Analyzer  
**ACCURACY  
for the asking**

Get the right answers all the time with Lanoke Motor Analyzer. Instrument accuracy guaranteed to 2%. Precision Testing without removing the units from the car on coil, spark plugs, distributor, manifold, starter, generator, valves, rings, timing, and everything comprising a complete motor analysis. Look over these features: Sapphire set, D'Arsonval meters protected properly with shunts. Kinkless test wires, a thorough procedure with certificates and procedure forms. All backed by an organization of many years' standing.

## don't be a FUEL FOOL

Know the carburetor mixture, fuel pump suction and pressure, muffler back pressure, and acceleration charge instantly with the LANOKE MASTER FUEL ANALYZER. All tests made on the car which assures accuracy under actual operation without removing unit from car. A real asset for your shop.

LANOKE CONDENSER AND CIRCUIT TESTER gives every condenser test, including capacity, breakdown, leakage and series resistance. An absolute necessity in your shop.

No automotive service man can afford not to own the LANOKE CONTACT ALIGNING TOOL for distributor work. Does every job quickly and accurately without destroying proper cam angle.

Let the LANOKE CAM ANGLE PROTRACTOR help you take the "buck" and "skip" out of V-8 and the "ping" out of other motors by proper setting of contact points and accurate synchronization of distribution.

Help the car owner know when his motor needs a tune-up by selling him the LANOKE TUNE-O-METER, which tells on sluggish motors. Will stimulate your own tune-up business.

Manufactured by  
**LANAGAN & HOKE, INC.**  
PHILADELPHIA, PA.

# LANOKE

## Vacuum Gear Shift

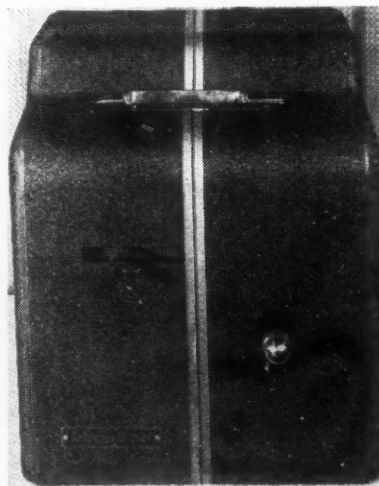
One of the more important advancements in the automotive field for 1938 is the introduction of the Evans Vacuum Gear Shift, which permits gear shifting by remote control and eliminates the conventional gear shift lever in the floor. The Evans Vacuum Gear Shift, developed and manufactured by the Evans Products Company, Detroit, is available as optional equipment on the 1938 Nash and Graham lines and at extra cost on Studebaker's President and Commander.



**Modern Blacksmith** This chair was cut from an old fifty gallon gasoline drum, by a blacksmith at Arcadia, Fla. Comfort for garage patrons and cash for the smithy are the main features.

## New Time Clock

The International Business Machines Corp., 270 Broadway, New York City, has introduced a new time recorder designed to meet the needs of present-day payroll records. It uses



standard size time cards, has an automatic day-to-day date change and an automatic ribbon feed. It is electrically operated and is attractively finished in black morocco.

Specified by  
**FLEET OWNERS...**  
the men who  
know motor oil



**Golden Shell**  
MOTOR OIL



**Flint** Loss-Proof  
Compression  
SPARK PLUG!

The favorite replacement plug with leading garage and service stations because it produces maximum power not only in the older type of motors but also in the latest type of high-speed, high compression motors.

Order from your jobber!  
Write for literature!

C. V. S. Manufacturing Co.  
Flint, Michigan



**POWER to provide SAFETY  
CONTROLLABLE for COURTESY**

A signal to be proud of. Definitely needed by the highway user who desires SAFETY.

Write for Literature on New  
WAV-A-WAY Light.

**BUELL MANUFACTURING COMPANY**  
2989 Cottage Grove Chicago, Ill.

## THIS AD

IS LARGE ENOUGH TO REMIND  
YOU THAT FITZGERALD GAS-  
KETS ARE MORE PROFITABLE •

THE FITZGERALD MFG. CO., TORRINGTON, CONN.

# FITZGERALD GASKETS

## SEVEN IN ONE BATTERY TOOL



### A SENSATIONAL SELLER!

Indispensable to service man, mechanic, garage-man, batteryman. Removes battery nuts, terminal clamps, terminal spreader and cleaner, bolt hole cleaner, lifter and carrier, hammer, spanner wrench. Write for Free Circular, or send \$1.60 for sample—now. JOBBERS: Send for sample and profitable jobber proposition today. Cash in on sales-stimulating advertising now appearing in leading trade publications.

**PAZZANO WRENCH COMPANY**  
712 MOODY STREET - WALTHAM, MASSACHUSETTS



## Designed to your Specifications



### The **ENGELHARD** Exhaustalyser

The maintenance man advised us of the features desired. They were incorporated into the design of this new exhaust gas analyser. The instrument meets your conditions.

Send for Bulletin 601

**CHARLES ENGELHARD, Inc.**

90 Chestnut St., Newark, N. J.

Manufacturers of Pyrometers, Resistance Thermometers, Combustion Indicators, Exhaust Gas Analysers, Flue Gas Analysers, Thermocouples.

### Valve Stem Vulcanizer

The Chase Manufacturing Company, Inc., 3216 Morgan Street, St. Louis, Mo., has recently announced their Model C Electric Vulcanizer designed especially for replacing all sizes of rubber valve stems. Operating electrically, the heat is thermostatically controlled at the correct vulcanizing temperature. The vulcanizer is quick and economical in operation and carries a list price of \$8.50.

### GE Business Up

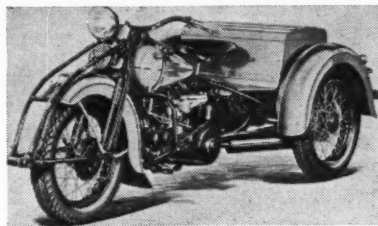
Orders received by General Electric Company during the first nine months this year amounted to \$305,276,556, an increase of 44 per cent over the \$211,891,038 received during the same period last year, according to President Gerard Swope.

Orders received during the third quarter of 1937 amounted to \$88,010,937, compared with \$74,922,441 during the corresponding period last year, an increase of 17 per cent. The third quarter and first nine months this year were the largest of any corresponding periods since 1929.

### Harley-Davidson

#### Improves Servi-Cars

The motorcycle service car produced by Harley-Davidson Motor Co., Milwaukee, Wis., contains several improvements and refinements for the 1938 model. The rear drive chain is now completely inclosed protecting it from dust and dirt and is lubricated by a special oiler. Larger and more efficient mufflers are used and a major feature is the introduction of a new



tow-bar clamp. This new clamp is the jaw-type which overcomes the difficulty heretofore experienced when connecting the tow bar to bumpers equipped with stone or dust guards. The safety cable is now prominently attached to the front of the Servi-Car and held in place by a strong coil spring when it is not in use.

### Atlas Expands

Atlas Press Company, Kalamazoo, Mich., recently completed a plant addition which provides 15,000 square feet of additional floor space. The new floors are being used to increase production of the company's bench lathes, shapers, drill presses, and arbor presses.

## A COMPLETE OVER-ALL engine check-up in only TEN MINUTES with the new **POTTER ENGINE ANALYZER**



This opens the road to **REAL PROFITS FOR YOU**. After the quick 10-minute check-up you know what adjustments, parts and repairs are necessary and can quote prices accordingly.

*Complete Technical Information for tuning every car furnished with every complete Engine Analyzer.*

Write for free details of how **YOU** can make a quick, accurate engine test within only **TEN** minutes. It will increase your service sales.

Booths S-436 and S-438  
Automotive Service Industries Show,  
December 6-11th  
Headquarters, Bismarck Hotel

### THE POTTER COMPANY

1950 Sheridan Road

NORTH CHICAGO, ILL.

U. S. A.

LOOK FOR  
The Mark of  
"Superiority"



on Every  
**AUTOMOTIVE  
PRODUCT**

LION offers every automotive need from one **RELIABLE** source of supply. WE HAVE THE **COUNTRY'S LARGEST AND MOST COMPLETE STOCK OF DEPENDABLE QUALITY AUTO PARTS AND SUPPLIES**. A postcard will bring **FULL PARTICULARS ABOUT OUR NEW JOBBERS CATALOG FOR 1938**.

**LION AUTO PARTS & MFG. CO.**

Dallas, Texas

CHICAGO, ILL.

### Motor Age

is the  
Independent  
Repairman's  
Own  
Magazine

# NEW SOURCE OF PROFIT with OILDEX & FILTREX OILDEX

K & S OIL DILUTION EXTRACTOR



U. S. Pat. No. 1,990,657

Oildex performs a new and needed service.

Oildex is made to order for easy and profitable selling by you. It

provides, among other things, these exclusive—wanted and important advantages...

Increased Gasoline Mileage  
Prevents Excessive Crankcase Dilution  
Prevents Crankcase Sludge  
Removes Water from Crankcase  
Improves Cold Weather Starting

Oildex is consistently advertised. Thousands giving satisfaction to users. Has okay of large fleet operators. No competition. Don't close your mind, or your books, to this new and ready money-maker. Investigate!

## FILTREX

K & S SERIES OIL FILTER



—A series of three distinct filtering mediums.

—OIL kept CLEAN, CLEAR, PURE!

OUTLET

Pat. Pending

Watch your sales jump when you push Oildex and Filtrex. Long lasting replacement cartridge costs only 60c. Get going with Filtrex and Oildex. Write for details, prices, discounts, etc., to

**K & S MOTOR PRODUCTS, INC.**  
18 Hillside Ave., Hillside, N. J.

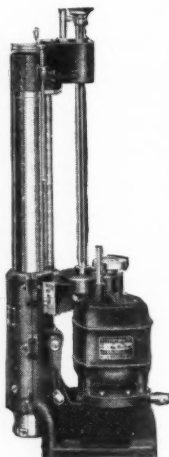
### Combination Puller

#### Does Three Jobs

A new puller introduced by Felt Products Mfg. Co., 1504-14 Carroll Ave., Chicago, Ill., pulls axle shafts, bearing races and all types of grease and felt retainers. Jaws are made of drop forged chrome molybdenum steel, and all other parts are carefully machined and heavily chrome plated. List price, \$23.00; slightly higher on West Coast.

### Storm Announces

#### New Boring Bar



A new boring bar, known as Model NS-60, has been introduced by the Storm Mfg. Co., Inc., 406 6th Ave., S., Minneapolis, Minn. This new boring bar has a range from 2.6 in. in diameter up to 4.5 in. so that it will accommodate cylinders ranging from the Ford 60 to all passenger cars and including some light truck models. List price—\$295.

### Atlas Equipment Catalog

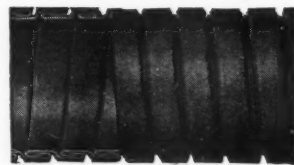
Atlas lathes, drill presses, arbor presses and shapers are pictured and described in the new Atlas Equipment Catalog for 1938, released recently by Atlas Press Company. Two new Atlas machine tools are introduced: a shaper with 7-in. stroke, and a back-gear screw-cutting lathe with 6-in. swing. Copies are available from Atlas Press Co., Dept. 5, Kalamazoo, Mich.—ask for General Catalog No. 28.



### Exide Merchandising Campaign

The Electric Storage Battery Co., Allegheny Ave. and 19th St., Philadelphia, Pa., is conducting a merchandising campaign under the heading "Easy Does It." The plan explains the proper way to merchandise their line of "Exide" batteries, and includes the use of testing equipment, record keeping and the selling approach that have proved the easy way to greater profits.

### A Job With Interlox Is A Job Well Done

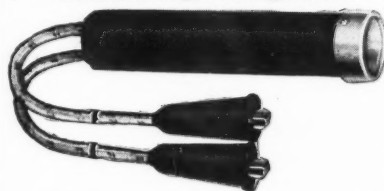


You can be sure that the job done with Interlox Metal Hose is a job well done because Interlox is standard equipment on leading automobiles, trucks, tractors and buses, carburetors, battery cables. Order Interlox Metal Hose from your jobber today for the replacements you will be required to make tomorrow.

We also manufacture Universal Gasoline Hose Couplings, Flexible Metal Conduit, Brass Fittings, Castings, Stampings, Jigs, Dies and Specially Designed Tools and Machinery. Write for further information.

**INTERNATIONAL METAL HOSE CO.**  
10709-15 QUINCY AVE. CLEVELAND, O.

### TIMING LIGHT



Timing ignition to original specifications is simple with the Stromberg Timing Light. Throws a concentrated, powerful light. Compactly designed for use in close quarters. Every mechanic needs one. Ask your jobber or write direct.

**STROMBERG MOTOSCOPE CORP.**  
2707 Belmont Ave. Chicago, Ill.

### THE TWIN POWER RINGS OF THE International LINE

Super COMPRESSION CHIEF  
OIL CHIEF

THE INTERNATIONAL PISTON RING CO.  
CLEVELAND, OHIO.

### THE LINE THAT LEADS TO PROFITS

## REMCO SHOP EQUIPMENT

Hydraulic Presses, Wrecking Cranes, Car Washers, Jacks, Trestles, Creepers, Oil Spray Guns, etc.

Write for FREE literature.  
**THE REMCO PRODUCTS CORP.**  
State & Hay Sts., York, Penna.



## LOWER COSTS

on all types of work explains the nation-wide popularity of Gardiner Solders. Used and recommended by leading car makers and body builders, their uniform high quality permits faster and neater work . . . saves both time and material because they work faster and go farther. Yet they actually cost less than "nameless" solders, because produced in volume by the most modern methods.

The Gardiner Line meets every soldering need . . . includes Acid and Rosin Core Solders in various alloys and core sizes . . . body, bar and wire solders . . . Permanent Lining Babbitt metal. And Gardiner's complete facilities assure prime quality and prompt service on special solders to meet any specification requirements.

PACKED IN  
1, 5, AND  
20-LB. SPOOLS



4839 S. Campbell Ave., Chicago, Ill.

**National**  
GARAGE TOOLS

**MEAN  
PROFIT DOLLARS  
FOR YOU  
BECAUSE**

They Save Time and Trouble On Your  
Toughest Jobs.

National Machine & Tool Co., Jackson, Mich.

## D & T WHEEL BALANCING WEIGHTS



Now made in seven sizes for Passenger cars and two sizes for Trucks for perfect dynamic or static wheel balancing. Neat, inconspicuous, installed instantly without tools. New clip cannot

damage tire. Weights will not lose off. Used and recommended by many leading manufacturers and jobbers. Write for our new catalog and prices.

**TURNER MANUFACTURING CO.**

KOKOMO, INDIANA

## Latest Norma- Hoffmann Price List

The Norma-Hoffmann Bearings Corp. of Stamford, Conn., has recently issued their latest price list No. F-955, which, in addition to enumerating their complete line of metallic ball and roller bearings, gives complete dimensional information and comprehensive interchangeable data. It also contains a numerical price list as well as a pictorial index.

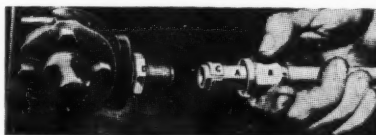
## "Air-Shell" Twins

The latest product of The Sparks-Withington Co., Jackson, Mich., is their new Model 231 Air-Shell horn. Harmoniously blended, these horns employ the principle of a full-length air column die-cast in coil form, which makes possible a very compact assembly. Supplied with individual brackets for mounting against the dash under the hood, complete with lead wires and relay.



## Self-Flaring Tube Couplings

The latest product of the Packless Metal Products Corp., Long Island City, N. Y., is their Self-Flaring Tube Coupling. It is claimed that this new fitting establishes a perfect flare without the use of flaring tools by the simple operation of connecting the tube to the coupling. No soldering or brazing is required, the entire operation being automatically performed through the use of a special split ring placed on the end of the tube.



**I SURE CAN  
TURN OUT THE  
WORK WITH  
THESE WHEELS**



**AND NO WONDER—  
THEY'RE MADE BY**

**Carborundum**

REG. U. S. PAT. OFF.

YOU can depend on wheels by Carborundum to cut faster, last longer and do a workman-like job on tools, parts, fittings and on every grinding job. Ask your jobber for Carborundum-made products.



Aloxite Brand Aluminum Oxide "Electrocoated" cloth always gives a perfect foundation for a smooth finish. Ask your jobber for this fast, clean-cutting cloth.

**THE CARBORUNDUM COMPANY**

REG. U. S. PAT. OFF.

NIAGARA FALLS, N. Y.

Sales Offices and Warehouses in New York, Chicago, Philadelphia, Detroit, Cleveland, Boston, Pittsburgh, Cincinnati, Grand Rapids

(Carborundum and Aloxite are registered trade-marks of The Carborundum Company)

**CARBORUNDUM**

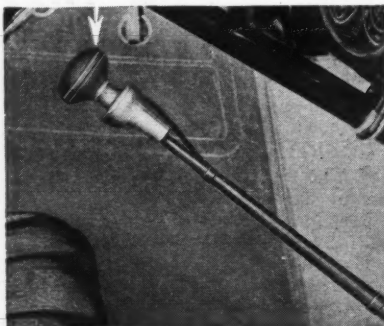
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ABRASIVE PRODUCTS



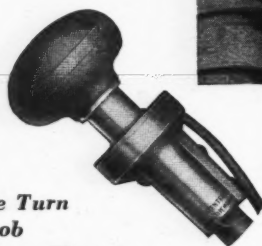
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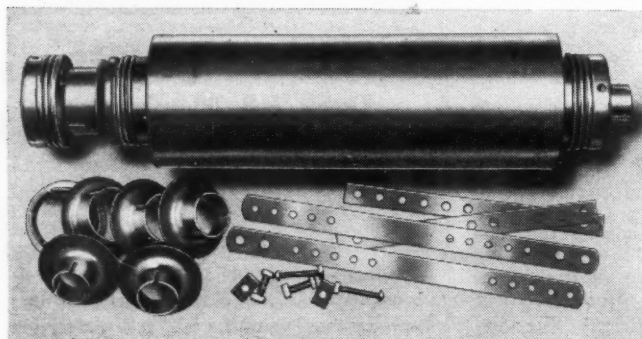
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